

	Number of Patients.		Number of Patients.
Entally and Entally Cooly Depôt	22	Muchosa Bazar	4
Myzium Row	2	Mullungah	4
Esplanade Row	2	Nimtollah Street	1
Elisha Convent	1	Omrattollah Street	1
Fenwick's Bazar	8	Park Street	1
Free School	4	Police Compound	1
Fort William	8	Puttuldangha	2
Gorastan Lane	2	Puttoreah Ghant Street	2
Government Place	2	Police Hospital	7
Gowkhannah	3	Picked up by Police	4
General Hospital	15	Raneemoody Gully	2
Garden Reach	2	Russell Street	1
Hautcolah	3	St. James' Street	1
Howrah	9	Strand	2
House of Industry	9	Sham Bazar	4
House of Correction	2	Shampooer	3
Jorasanko	13	Simlah	12
Jackson's Ghant	3	Sukeah's Lane	2
Jaun Bazar	5	Sailors' Home	8
Jorabagan	2	Sealdah and Sealdah Cooly Depôt	46
Kidderpore	4	Tank Square	2
Lall Bazar	2	Taltallah	22
Larkins' Lane	7	Tiretta's Bazar	3
Mendeobagan	2	Tullah	3
Mango Lane	1	Tollegunge	2
Manicktollah	2	Tengra Cooley Depôt	4
Medical College Hospital	19	Wellesley Place	2
Middleton Row	3	Wellesley Square	2
Mirzapore	8	Wellington Square	5
Moula Ali Durga	2		
Moochkepara Lane	1		
Moorghyhatta	2	Total	560

## II.—Table.

## RESIDENCES (OR WHENCE THE PATIENTS CAME.)

## WATER (SHIPPING AND BOATS IN THE HOOGLY.)

	Number of Patients.		Number of Patients.
Ship Art Union	2	Ship Eliza	1
" Alnwick Castle	1	" Eliza Bencke	2
" Alfred	1	" Elizabeth Nicholson	1
" Among	1	" Express	1
" Burdwan	1	" Hampden	2
" Bordaux	1	" Huddington	1
" Beaulamha	1	" Iron Duke	1
" Beaumaris Castle	1	" Isle of the South	1
" Clydesdale	2	" James Crossfield	2
" Comet	1	" Koina	1
" David Malpas	1	" Lightning	2
" Ethel	1	" Lincoln	1

	Number of Patients.		Number of Patients.
Ship <i>Lady Melville</i>	1	Ship <i>Tirrell</i>	1
" <i>Majura</i>	1	" <i>Thallata</i>	1
" <i>Malabar</i>	1	" <i>Vancapellen</i>	1
" <i>Maria Hay</i>	2	" <i>Victoria Nyanza</i>	1
" <i>Punjab</i>	1	" <i>Western Empire</i>	1
" <i>Pride of Canada</i>	1	" <i>Wallace</i>	2
" <i>Royal Albert</i>	1		
" <i>Rowena</i>	3		53
" <i>Reenit</i>	1		
" <i>St. Lawrence</i>	1	From Boats	14
" <i>Star of Albion</i>	1		
" <i>Simla</i>	2	Total	67

## 15.—How the Disease spread.

It is well known that Small-Pox is an infectious malady, and that it propagates by contagion. But during an epidemic, such as that which we are now passing through, the pestilence is in the air. This is proved by numerous circumstances. In the first place Small-Pox is not only raging here but throughout the Gangetic Valley, involving Meerut, Delhi, Agra, Allahabad, as well as Calcutta. It prevails likewise in other Provinces; in short, I may say, that it is present now more or less everywhere in India. Such a universal outbreak simultaneously in many and distant places can be due to no other cause than an aerial poison, which enters into the system by the respiratory passages, and thus gives rise to its peculiar action even in individuals who take the utmost care against infection. That the disease is propagable by contagion and inoculation is no argument against the aerial agency. Secondly, the occurrence of it in persons who have avoided exposure to infection is another proof of the same fact. In epidemic years no one is safe against its attack. But not to waste any more words I beg to submit Table III. shewing the sixteen weekly Returns of the localities and ships from which the patients came in the order of time. This will best explain that there is no definite law respecting the extension of this awful pest in epidemic seasons. It does not advance step by step in the lines of human intercourse, nor is it confined to man alone, it affects birds and quadrupeds as well.

## III.—Table

From 23rd December 1864 to 5th January 1865.		From General Hospital	
From General Hospital	10	" Lall Bazar	2
" Medical College Hospital	1	" Tank Square	1
" Taltullah	3	" House of Correction	1
" Collingah	1	" Bow Bazar	1
" Ship <i>Ironduke</i>	1	" Cossitollah	1
" " <i>Royal Albert</i>	1	" Colootollah	1
" " <i>Rowena</i>	1	" Chandney Hospital	1
" Police Hospital	6	" Cossipore	2
" Bamunbustee	1	" Bamunbustee	2
" Colootollah	2	" Fenwick's Bazar	2
" Bow Bazar	1	" Collingah	1
" Moosheparrah	1	" Entally	1
Picked up by the Police	4	" Taltullah	1
From Cossitollah	3	" Ship <i>St. Lawrence</i>	1
		" " <i>Vancapellen</i>	1
		" " <i>Hampden</i>	1
		" " <i>Burdwan</i>	1
From 6th to the 12th January 1865.		From 13th to 19th January 1865.	
From Dhurmtoilah	2	From Bow Bazar	6
" House of Industry	2	" Howrah	2
" Medical College Hospital	4	" Cossitollah	1

From Collingah	2
" Free School	2
" Medical College Hospital	2
" General Hospital	2
" Tank Square	1
" Chandney	1
" Entally	2
" Gowkhannah	2
" Taltullah	4
" Muchoon Bazar	1
" Dharmtollah	1
" Russell Street	1
" Ship <i>Madlington</i>	1
" " <i>Koima</i>	1
" " <i>Punjaub</i>	1

From 20th to 26th January 1865.

From Taltullah	2
" Middleton Row	1
" Mullungah	1
" House of Industry	1
" Bow Bazar	12
" Chandney	1
" Cossitollah	1
" Wellington Square	1
" Larkins' Lane	3
" Chitpore	1
" Chowringhee	1
" Burranuggur	1
" Colootollah	2
" Fenwick's Bazar	1
" Howrah	1
" Bamunbustee	2
" Sealdah	2
" Dharmtollah	1
" Muchoon Bazar	1
" Sailors' Home	1
" Ship <i>James Crossfield</i>	1
" " <i>Simlah</i>	1

From 27th January to 2nd February 1865.

From Circular Road	1
" Bow Bazar	5
" Wellington Square	1
" Dharmtollah	2
" Free School	1
" Chandney	1
" General Hospital	1
" Boitukhanah	1
" Mirzapore	1
" Cooley Bazar	2
" Kidderpore	1
" Medical College Hospital	1
" Simlah	1
" House of Industry	1
" Cotton Street	3
" Fenwick's Bazar	1
" Chitpore	5
" Taltullah	4
" Entally	3
" Colootollah	2
" Bang Bazar	1
" Jaun Bazar	2

From Tullah	2
" Cossipore	1
" Bamunbustee	1
" Larkins' Lane	1
" Sealdah	1
" Ship <i>Lightning</i>	1
" " <i>Artunion</i>	2
" " <i>James Crossfield</i>	1
" " <i>Bordaux</i>	1
" " <i>Simlah</i>	1
" " <i>Ainwick Castle</i>	1
" " <i>Elthol</i>	1
" " <i>Clydeedale</i>	1

From 3rd to 9th February 1865.

From Simlah	2
" Sailors' Home	2
" Cooley Bazar	2
" Mirzapore	4
" Taltullah	3
" Mullungah	1
" Howrah	2
" Circular Road	1
" Dharmtollah	1
" Collingah	1
" Muchoon Bazar	2
" Sealdah Cooley Depôt	1
" Jorasanko	2
" Mendes Bagan	1
" Sealdah	1
" Bow Bazar	4
" Chitpore	2
" Entally	3
" Cossipore	1
" Fenwick's Bazar	1
" Shampooer	1
" Colootollah	3
" Gowkhannah	1
" Chandney	2
" Burtollah	1
" Bang Bazar	1
" Allipore	1
" Burra Bazar	1
" Cotton Street	2
" Larkins' Lane	1
" Ship <i>Alfred</i>	1
" " <i>Majura</i>	1
" " <i>Result</i>	1
" " <i>Western Empire</i>	1
" " <i>Lincoln</i>	1
" " <i>Star of Albion</i>	1
" " <i>Tirrell</i>	1
" " <i>Malabar</i>	1

From 10th to 16th February 1865.

From Bow Bazar	6
" Collingah	2
" China Bazar	1
" Medical College Hospital	1
" Cossitollah	2
" Cooley Bazar	2
" Circular Road	1
" Tullah	2



From Chandney	8	From Chitpore	1
" Elisha Convent	1	" Entally	1
" Sealdah	3	" Fenwick's Bazar	1
" Belgachie	1	" Simlah	3
" Chitpore	6	" China Bazar	2
" Jaun Bazar	2	" Jackson's Ghaut	2
" Entally	1	" Custom House Ghaut	1
" Fenwick's Bazar	2	" Kidderpore	2
" Colootollah	4	" Bhowanipore	1
" Simlah	2	" Cotton Street	1
" Cossipore	1	" Ship <i>Pride of Canada</i>	1
" Balligunge	1	" " <i>Miza Beneki</i>	2
" Jorasanko	3	" " <i>Wallace</i>	2
" Mullungah	1	" " <i>Clydesdale</i>	1
" Baug Bazar	1	<i>From 3rd to 9th March 1865.</i>	
" Larkins' Lane	1	From Creek Row	1
" Talligunge	1	" Entally	1
" Howrah	1	" Medical College Hospital	3
" Burra Bazar	1	" St. James' Street	1
" Chowringhee	1	" Bow Bazar	2
" Mirzapore	2	" Chowringhee	1
" Ship <i>Hampden</i>	1	" General Hospital	1
" " <i>Rowena</i>	1	" Cooley Bazar	2
" " <i>Thallata</i>	1	" Dhurmtoollah	3
" " <i>Isle of the South</i>	1	" Sealdah Cooly Depôt	7
" " <i>Lightning</i>	1	" Taltullah	3
" Sailors' Home	1	" Bhowanipore	1
<i>From 17th to 23rd February 1865.</i>		" Chitpore	4
From Cooley Bazar	8	" Jaun Bazar	2
" Fort William	2	" Simlah	3
" Strand	1	" Jorasanko	6
" Free School	1	" Baug Bazar	2
" House of Industry	2	" Entally Cooly Depôt	4
" Cossitollah	1	" Fenwick's Bazar	1
" Sealdah	7	" Colootollah	1
" Middleton Row	1	" Strand	2
" Jaun Bazar	1	" Mirzapore	1
" Entally	3	" Bankshall	1
" Colootollah	2	" Sailors' Home	1
" Taltullah	1	" Ship <i>Victoria Nyania</i>	1
" Collingah	1	" " <i>Elizabeth Nicholson</i>	1
" Bow Bazar	1	<i>From 10th to 16th March 1865.</i>	
" Jorasanko	2	From Bow Bazar	1
" Cossipore	1	" China Bazar	1
" Doorgapore	1	" Entally	1
" Bhowanipore	1	" Raneemoody Gully	1
" Shampookur	2	" Jorasanko	3
" Sham Bazar	1	" Taltullah	3
" Sailors' Home	2	" Entally Cooly Depôt	1
" Ship <i>Beautlamka</i>	1	" Colootollah	1
<i>From 24th February to 2nd March 1865.</i>		" Sealdah Cooly Depôt	1
From Moorghyhatta	1	" Baug Bazar	3
" House of Industry	3	" Simlah	5
" Medical College	1	" Cotton Street	2
" Bow Bazar	2	" Fenwick's Bazar	2
" Cossitollah	3	" Circular Road	3
" Sealdah	17	" Chitpore	1
" Strand	1	" Cossipore	1
" Howrah	2	" Bhowanipore	1
" Middleton Row	1	" Custom House Ghaut	3
" Collingah	4	" Alipore	1
" Garden Reach	1	" Strand	1
" Baug Bazar	4	" Ship <i>Eliza</i>	1
		" " <i>Amoney</i>	1
		" " <i>Rowena</i>	1

From 17th to 23rd March 1865.

From Taltullah	1
" Bow Bazar	1
" Baug Bazar	1
" Chitpore	2
" Tengra Cooly Depôt	2
" Cooley Bazar	1
" Entally	1
" Entally Cooly Depôt	1
" Circular Road	1
" Simlah	1
" Bhowanipore	1
" Custom House Ghaut	1
" Sham Bazar	1
" Cossipore	1
" Cotton Street	1
" Police Compound	1
" Ship David Malheson	1
" " Beaumaris Castle	1
" " Conset	1

From 24th to 30th March 1865.

From General Hospital	1
" Medical College Hospital	1
" Custom House Ghaut	3
" Chitpore	1
" Cotton Street	2
" Bow Bazar	1
" Sealdah Cooly Depôt	10
" Tengra ditto	3
" Tullah	1
" Taltullah	1
" Mirzapore	1
" Entally	1
" Simlah	1
" Sham Bazar	1
" Nimtollah	1
" Ship Maria Hay	1

From 31st March to 6th April 1865.

From Cossitollah	1
" Wellesley Street	1
" Cooley Bazar	3
" Bhowanipore	2
" Chitpore	3
" Jackson's Ghaut	1
" Simlah	2
" Collingah	1
" Baug Bazar	1
" Sealdah	1
" Sealdah Cooly Depôt	1
" Cotton Street	1
" Fort William	1
" Jorasanko	2
" Hateolah	1
" Park Street	1
" Ship Express	1
" " Maria Hay	1

From 7th to 13th April 1865.

From Medical College Hospital	4
" Bhowanipore	1
" Chitpore	2
" Jorasanko	1
" Cossipore	1
" Entally	1
" Entally Cooly Depôt	1
" Fort William	5
" Burtollah	3
" Tengra Cooly Depôt	1
" Sham Bazar	1
" Sealdah Cooly Depôt	1
" Hateolah	1
" Taltullah	2
" Bamunbustee	1
" Cotton Street	1
" Ship Lady Melville	1
Total	627

Nevertheless it is prudent to adopt every available means against infection. Isolation and confinement do this to a certain extent, and so does also the immediate destruction of every article that has once been used by a Small-Pox patient. But it is here where our principal difficulties lie; some people will not listen to reason, and are quite satisfied if their clothes are washed to wear them again. Others again are either too poor or too ignorant to be persuaded to part with their clothes. The result is that the clothing of all these people meets the clothing of others who are more careful in the house of the washerman, and are often put into the same boiler and the same washing tub. What follows next can be readily understood, i. e., the clothes of the careful and the clothes of the careless become equally impregnated with infectious matters if any still remain attached to them. But it is not the clothing only by which the contagion spreads. It is also promoted by overcrowding, uncleanness, and defects of ventilation. In a poor man's house, perhaps, there occur two or three cases of Small-Pox. The house cannot be deserted; on the contrary it is crowded with inmates. But the sick will not go to Hospital, nor do their friends urge them to go. They have no fear, and so they handle these cases, sit down on their beds, and then go about their business in the bazar and other public places without washing their hands or changing their clothes. Such persons, though not always affected themselves, are yet walking transports of contagion, and their visits bring no blessings to those who have to receive them.

The same causes are in operation in an exaggerated degree in the various Cooly Depôts, and hence the great number of cases that come from those places.

It is almost impossible by any law or any amount of precaution to prevent the spread of Small-Pox in this manner. Time and enlightenment may do much; but the great remedy which none of these circumstances can touch is the practice of vaccination, which, if repeated once or twice, will more effectually check the disposition of the body to take the disease than any amount of prosperity, cleanliness, or ventilation.

16.—*Analysis of Cases.*

I beg to submit here Tables IV, V., and VI. prepared at three different stages of the epidemic.

Table IV. gives a return of the admissions, deaths, recoveries, and remaining from the 23rd December 1864 to the 9th February 1865, respectively, of the European males and females, and the Native males and females.

## IV.—Table.

*Return of the Small-Pox Hospital from 23rd December 1864 to 9th February 1865.*

*Calcutta, 10th February 1865.*

		Admissions.	Deaths.	Discharges.	Remaining.	Mortality to admissions per 100.
EUROPEANS ...	{ Male ...	109	21	47	41	16.5486
	{ Female...	10	2	3	5	20
	Total ...	119	23	50	46	...
NATIVES ...	{ Male ...	123	37	32	54	30.8
	{ Female...	20	9	8	9	40
	Total ...	143	45	35	63	...
Grand Total ...		262	68	85	109	26.95

Table V. gives a similar return from the 23rd December 1864 to the 9th March 1865.

## V.—Table.

*Return of the Small-Pox Hospital from 23rd December 1864 to 9th March 1865.*

		Admissions.	Deaths.	Discharges.	Remaining.	Mortality to admissions per 100.
EUROPEANS ..	{ Male ..	165	42	91	32	25.45
	{ Female..	19	4	8	9	21.05
NATIVES ..	{ Male ..	240	100	70	61	41.66
	{ Female..	60	34	13	13	56.66
Total ..		484	180	184	115	37.1



Table VI. gives a third return of the same kind from the 23rd December 1864 to the 13th April 1865.

### VI.—Table.

*From 23rd December 1864 to 13th April 1865.*

		Admissions.	Deaths.	Recoveries.	Remaining.	Mortality to admissions per 100.
EUROPEANS ...	Male ...	188	51	127	10	27.12
	Female...	23	5	10	3	21.73
NATIVES ...	Male ...	317	124	149	24	42.27
	Female...	99	59	31	9	59.50
Total ...		627	249	328	55	39.71

The first of these Returns extends over a period of seven weeks, and yields admissions 262, deaths 68, recoveries 85, and remaining in Hospital 109.

The second Return extends over eleven weeks, and yields admissions 484, deaths 180, recoveries 189, and remaining in Hospital 115.

The third Return extends over sixteen weeks,\* and yields admissions 627, deaths 249, recoveries 328, and remaining in Hospital 55.

So that while during the first seven weeks the admissions on an average were 5.3469 per diem, during the next four weeks they were as high as 7.9285, but falling again in the last five weeks to 4.0857 a day.

The death rate in the first period of seven weeks is 1.387 a day, in the next four weeks 4.14 a day, and in the last five weeks about two a day.

Table VII. exhibits the admissions and deaths during the whole sixteen weeks at different ages.

Under the age of 5 years there were 37 admissions and 11 deaths.

"	"	10	"	"	30	"	7	"
"	"	15	"	"	33	"	2	"
"	"	20	"	"	126	"	48	"
"	"	30	"	"	310	"	142	"
"	"	40	"	"	69	"	31	"
"	"	50	"	"	15	"	6	"
"	"	60	"	"	6	"	2	"
"	"	70	"	"	1	"	0	"
Above	"	70	"	"	20	"	0	"

VII.—Table.

ADMISSIONS AND DEATHS AT DIFFERENT AGES.

From 23rd December 1864 to 13th April 1865.

		Under 5 years.	Under 10 years.	Under 15 years.	Under 20 years.	Under 30 years.	Under 40 years.	Under 50 years.	Under 60 years.	Under 70 years.	Under 80 years.
EUROPEANS ..	Male ..	8	5	7	86	109	19	8	1	0	...
	Female ..	2	5	8	0	6	0	1	0	0	...
NATIVES ..	Male ...	18	15	19	68	152	88	5	1	1	...
	Female ...	11	5	4	18	43	12	1	4	0	...
Total ...		87	80	83	126	310	69	15	6	1	...
Deaths ...		11	7	2	48	142	31	6	2	0	...
Percentage of mortality to admissions ...		29.70	28.83	0	38	45.8	44.9	40	33.3	0	...

Tables VIII., IX., X. give the admissions and deaths of the unprotected and protected persons.

Table VIII. is for the first seven weeks. During this time there were 132 admissions of unprotected individuals, out of which 39 died; 7 admissions of the vaccinated too late, 4 twice vaccinated, 1 vaccinated and had also the Small-Pox before, 3 had only Small-Pox before; none of these classes died: 70 vaccinated once, out of whom 21 died; 40 inoculated, out of whom 8 died.

VIII.—Table.

Return of the Small-Pox Hospital from 23rd December 1864 to 9th February 1865. Admissions and Deaths of the unprotected and protected.

		Unprotected.	Vaccinated too late.	Vaccinated twice.	Vaccinated once.	Vaccinated and had also Small-Pox before.	Inoculated.	Had only Small-Pox before.	Grand Total.
EUROPEANS ...	Male ...	88	0	4	65	1	0	0	
	Female ...	6	1	0					
NATIVES ...	Male ...	80	5	0	5	0	40	8	
	Female ...	10	1	0					
Total ...		132	7	4	70	1	40	8	262
Died ...		39	0	0	21	0	8	0	68
Percentage of mortality to admissions ...		29.54	0	0	30	0	20	0	25.95



Table IX. is for the whole eleven weeks to 9th March. Up to that date the unprotected admissions had amounted up to 250 with 133 deaths; the vaccinated too late to 25, had Small-Pox before and got it again on re-vaccination 4, vaccinated twice 12, vaccinated and had also Small-Pox before 1, the last four classes without any deaths; vaccinated once 123, deaths 31; inoculated 55, deaths 15; had only Small-Pox before 14, death 1; grand total of deaths 180.

### IX.—Table.

ADMISSIONS AND DEATHS OF THE UNPROTECTED AND PROTECTED.

From 23rd December 1864 to 9th March 1865.

	Unprotected.	Vaccinated too late (some after previous vaccination.)	Had Small-Pox before, but got it again now on vaccination.	Vaccinated twice.	Vaccinated once.	Vaccinated and had also Small-Pox before.	Inoculated.	Had only Small-Pox before.	Grand Total.
EUROPEANS.	Male ..	57	1	....	9	97	1	...	165
	Female..	8	1	....	1	9	....	...	19
NATIVES.	Male ..	146	14	2	2	12	....	51	249
	Female ..	39	9	2	...	5	....	4	60
Total ..	250	25	4	12	123	1	55	14	484
Deaths ..	133	.....	.....	...	31	....	15	1	180
Percentage of mortality to admissions ..	53½	.....	.....	...	25½	....	27½	7½	37½

Table X. is for the whole sixteen weeks to 13th April. Up to that date the unprotected admissions were 354, deaths 185; vaccinated too late 27, had Small-Pox before and got it again on re-vaccination 5, vaccinated twice 12, vaccinated and had also Small-Pox before 1, Small-Pox twelve days after vaccination 1, no deaths in these five classes; vaccinated once 148, deaths 43; inoculated 55, deaths 20; had small-pox before 14, death 1; grand total of deaths 249, and admissions 627.

## X.—Table.

## ADMISSIONS AND DEATHS OF THE UNPROTECTED AND PROTECTED.

From 23rd December 1864 to 13th April 1865.

	Unprotected.	Vaccinated too late.	Had Small-Pox before, has got it again now after vaccination.	Vaccinated twice.	Vaccinated once.	Vaccinated and had also Small-Pox before.	Got Small-Pox eruption twelve days after vaccination.	Inoculated.	Had only Small-Pox before.	Grand Total.
EUROPEANS... { Male ...	66	1	1	0	110	1	0	0	0	188
Female...	10	1	0	1	11	0	0	0	0	23
NATIVES ... { Male ...	207	15	2	2	20	0	0	58	13	317
Female...	71	10	2	0	7	0	1	7	1	99
Total ...	354	27	5	3	148	1	1	65	14	627
Deaths ...	185	0	0	0	43	0	0	20	1	249
Percentage of mortality to admissions }	52.2	0	0	0	29	0	0	30.8	7.14	39.71

Table XI. gives the admissions and deaths in the different varieties of Small-Pox. There were 50 admissions of variola discreta and 1 death, 19 admissions of variola mitigata and 2 deaths, 3 admissions of variola corymbosa and 1 death, 555 admissions of variola confluenta and 245 deaths; grand total of admissions 627 and of deaths 249.

## XI.—Table.

## ADMISSIONS AND DEATHS IN THE DIFFERENT FORMS OF THE DISEASE.

From 23rd December 1864 to 13th April 1865.

	Variola Mitigata.	Variola Discreta.	Variola Corymbosa.	Variola Confluenta.	Grand Total.
EUROPEANS ... { Male ..	13	15	3	157	188
Female ..	2	5	0	16	23
NATIVES ... { Male ..	1	19	0	297	317
Female ..	3	11	0	85	99
Total ..	19	50	3	555	627
Deaths ..	2	1	1	245	249
Percentage of mortality to admissions }	10.5	2	33.3	44.144	39.71

The admissions and deaths of Europeans and Natives are shown in Tables IV., V., VI., VII., VIII., IX., X. and XI. of both sexes under the different headings under which admissions and deaths have been already considered.

I beg to draw attention now to the ratio of mortality.

The mortality to admissions per 100 was up to 9th February for Europeans, males 13·3486, females 20; and Natives, males 30·8, females 40; general mortality 25·95: up to 9th March, for Europeans, males 25·7, females 21·7; and Natives, males 41·7, females 50; general mortality 37; up to 13th April, for Europeans, males 27·12, females 21·73; and Natives, males 42·27, females 50·50; general mortality 39·71.

Taking the deaths and recoveries up to 13th April they stood as 77·039 to 100. But taking the sum of deaths and recoveries up to the same date, the percentage of mortality is 43·53, while the mortality to admissions per 100, as I have already shown, is 39·71.

The ratio of mortality at different ages is as follows:—Under five years 29·70 per cent., under ten years 23·33, under fifteen years 6, under twenty years 88, under thirty years 45·8, under forty years 44·9, under fifty years 40, under sixty years 33·2, above sixty years nil.

Up to 9th February the mortality for the unprotected was 29·54 per cent., for the vaccinated once 30 per cent, for the inoculated 20 per cent. Up to 9th March it changed for the unprotected to 59, for the vaccinated once to 25, for the inoculated to 27, and for the previously affected with Small-Pox to 7 per cent. and up to the last date, i. e., 13th April, it is for the unprotected 52·2 per cent., for the once vaccinated 30, for the inoculated 30·8, and for the previously affected with Small-Pox 7·14.

The mortality among the cases of variola discreta has been 2 per cent., variola mitigata 10·5 per cent., variola corymbosa 33·3 per cent., and variola confluens 44·144 per cent.

Table XII. shews the mortality for each day after admission, and that the so-called critical days are the 2nd, 3rd, 4th, 6th, 7th, 8th and 9th days, although death seems to occur on other days as well up to the 46th day after admission, or, say, of the disease. 26th, 28th, 30th, 31st, 32nd, and 34th to 44th, however, were blank days on which no deaths took place.

## XII.—Table.

MORTALITY FOR EACH DAY AFTER ADMISSION SHEWING THE CRITICAL DAYS.

From 23rd December 1864 to 13th April 1865.

Number of days after admission.	Number of deaths.	Number of days after admission.	Number of deaths.	Number of days after admission.	Number of deaths.
1	8	17	4	33	3
2	19	18	5	34	0
3	24	19	1	35	0
4	24	20	4	36	0
5	13	21	2	37	0
6	19	22	3	38	0
7	21	23	3	39	0
8	26	24	1	40	0
9	19	25	1	41	0
10	9	26	0	42	0
11	10	27	1	43	0
12	6	28	0	44	0
13	5	29	1	45	1
14	5	30	0	46	1
15	7	31	0		
16	3	32	0		
				Total	240



Table XIII. shows the average and the longest and shortest times of duration under different conditions. The average duration of the disease in the 627 cases before admission was 5.49 days, in the Hospital 13.50 days, in cases of death 3.8 days, in cases of recovery 28.50 days. The longest time in the Hospital for recovery has been ninety-two days and the shortest two days.

### XIII.—Table.

SHOWING THE AVERAGE TIMES.

From 23rd December 1880 to 13th April 1885.

Number.	Average duration before admission.	Average duration in Hospital.	Average time of death.	Average time of recovery.	Longest time in Hospital for recovery.	Shortest time in Hospital for recovery.
627	5.49	13.50	3.8	28.50	92	2

#### 17.—Description of the Small-Pox as seen in this Hospital.

To make what I have to say as plain as possible I shall commence the description of the disease in the following order, *i. e.*, 1st Incubation, 2nd Initiatory Fever, 3rd Eruption, 4th Development, 5th Maturation, and 6th Desiccation. After this I shall notice complications, convalescence, and sequelae.

*Incubation.*—During so universal an epidemic as that which is raging now in this country, one of the most unsatisfactory tasks that a Physician can impose on himself is to undertake the work of ascertaining the length of the stage of incubation of Small-Pox. Dr. Gregory has set it down in cases of infection at twelve days, and in those of inoculation at seven or eight days. But even he is not positive on this subject. My own opportunities of adding any information on this point have been very small. But so far as they go I have reason to agree with Dr. Gregory, as a general rule, in cases of infection. *Sumatra*, a Native woman about thirty years old, came into the Small-Pox Hospital with her little boy, who was three days ill with Small-Pox, on the 28th March. On the 31st April she was herself seized with a strong fever which continued for forty-eight hours, and then subsided on the occurrence of a papular eruption on her skin on the 8th. On the 16th April she was covered with well-formed pustules densely all over, each surrounded by a distinct red areola, and filled with a turbid light yellowish fluid. On the face and forehead the pustules were confluent and more advanced than on the body and limbs.

In this case it is presumable that the woman was infected by attendance on her boy, which gives for the incubative stage exactly twelve days. I know, however, of other cases in which the length of this stage is at least doubtful. One gentleman, who had been vaccinated and likewise had the Small-Pox three years before, was roused out of his sleep in the middle of the night by a most disgusting smell. The venetians had been open and glass-shutters unclosed. On enquiry he found that there was a Small-Pox corpse lying in a hut just under his window in the adjoining premises. In the morning he was seized with rigors ushering in a strong fever which lasted for forty-eight hours, and ended in a mild crop of Small-Pox pustules. Here apparently the stage of incubation hardly lasted for six hours, though it is probable the infection had entered into him before, as his wife, who slept in the same bed, neither felt the bad smell nor got the disease.

The initiatory fever in no case has been less than forty-eight hours, but in some, owing to modifying circumstances, it has lasted much longer as a week or ten days before the appearance of the eruption. It has been always marked by an aching of the head, and a severe pain in the middle of the back and at the pit of the stomach, and sometimes violent delirium.

The eruption has appeared differently in different cases. Sometimes it has come out like minute vesicles, which became gradually enlarged, filled with a transparent lymph, umbilicated in the centre, and at last occupied by a well matured pus. Sometimes it commenced as little red points, like mosquito bites, became then gradually larger, more prominent, vesicular in the middle of the inflamed spot, umbilicated in the centre, filled with a transparent lymph, and, at last, matter. Sometimes patches, like those of erysipelas, made their appearance; and on these groups of vesicles formed which went through the same changes as in the other cases. Very often it first appeared as papules, such as are seen in lichen, and then passed into the vesicular form, seldom into pustules. At other times it formed hard prominences, such as are caused by the common house bug, and then became inflamed, vesicular, filled first with lymph and then pus, passing in fact through the usual changes of the pustular form. With regard to the time occupied in the full development of the eruption, sometimes the full crop broke out in one night, at other times it took days before it was completed.

From the commencement of the eruption to the full maturation of the pustules, in favorable cases, there has usually elapsed a period of seven or eight days; but in many cases of low vitality the eruption never advanced beyond vesicles; whilst, in others again, it stopped short at papules or red points. Lastly, in a few cases, the febrile disturbance subsided after forty-eight hours without being followed by any eruption whatever, or by something extremely anomalous.

After the eighth day desiccation set in first on the face and forehead, and afterwards on the body and extremities. In the pustular variety this gave rise to scabs on the bursting of the pustules, which gradually fell off in a fortnight or three weeks. In the vesicular variety with depression of vital power, the vesicles burst without maturation, and from the denuded dermis there flowed a gummy discharge like that of impetigo, which, drying, formed a thin pellicle or crust on the surface that cracked and gave rise to an intolerable itching, only partially allayed by frequent ablution. The last variety offered almost always the worst specimens of confluent Small-Pox, and more frequently proved fatal than otherwise.

The complications observed were, *firstly*, extension of the eruption to the mucous surfaces of the nostrils, mouth, pharynx, larynx, and trachea; *secondly*, pulmonary congestion; *thirdly*, diarrhoea and cholera; *fourthly*, dysentery; *fifthly*, mental affections, attended with violent delirium; *sixthly*, disease of the nervous system, giving rise to a general and frequent shivering of the body. All these were of serious import, but not necessarily fatal, as several cases have recovered in spite of them. Convulsions sometimes occurred before the outbreak of the eruption, but never afterwards. Conjunctivitis was met with in about a dozen instances or more; violent inflammation of the penis and scrotum in two, out of which one recovered; and a bubon in one who is just recovered. The convalescence usually occupied a considerable time, as will be easily understood by a reference to the average time in the Hospital in cases of recovery, which, I have already stated, has been 26.50 days.

During the convalescence many patients have suffered from a number of sequelae. Troublesome ulcers, boils, abscesses, sloughing of the cornea, bowel-complaints, and secondary fever have been exceedingly common. In fact, all the deaths in the later stages of the disease have been caused by the two last classes of maladies. The sloughing of the cornea ended in loss of sight in one eye in three instances only; all the other sequelae were successfully managed, and the patients ultimately carried through and discharged cured. The pitting of the skin has been far less than I could have expected; this result I attribute to the free and early use of baths.

#### 18.—General Remarks.

Under this head I have first to speak of the influence of vaccination and inoculation on the liability to Small-Pox.

As a general proposition it is now everywhere admitted that the liability to Small-Pox is lessened by both these operations, but it is not allowed that it is altogether annulled as was first supposed. People who have been vaccinated or inoculated are still liable to attacks of Small-Pox, though in a diminished degree. This diminution of the risk is greater from inoculation than vaccination, and the popular belief in this case is perfectly correct. This is borne out by Table X., which gives 160 persons as having got Small-Pox after previous vaccination, whereas only sixty-five persons were affected with the disease after previous inoculation. This result, obtained in a country where inoculation has been the rule and vaccination the exception, is a most significant fact. But while inoculation reduces the liability to Small-Pox, its influence on the mortality, when the disease occurs, is far less than that of vaccination. While no deaths took place after re-vaccination, and only 20 per cent. of the once vaccinated died, the percentage of deaths among the inoculated was 30.3, that of the entirely unprotected being 52.2. The operation of inoculation itself gives rise to various pustules which cannot be distinguished from those of the spontaneous disease; but vaccination causes a modified affection, vaccinia, not to be confounded with the Small-Pox, the eruption of which can be seen to progress side by side with the vaccine pustules. In the Chitpore Hospital I have had twenty-eight instances of this association up to 13th April. In the majority of these the Small-Pox showed itself within three to five days after

vaccination, in some still later, and in one case not till the expiration of the 14th day. I do not think, therefore, that the liability to Small-Pox is ever altogether destroyed by vaccination or inoculation. Cases have not been at all uncommon of the occurrence of Small-Pox within the first year of the vaccination, any within a few months. But though the liability to the disease is not abolished, the liability to death in such cases is certainly vastly reduced. These remarks apply, however, only to epidemic years. In ordinary times it is not usual for the vaccinated or the inoculated to take the Small-Pox. The percentage of mortality from Small-Pox in non-epidemic years is by no means very large; but in epidemic years it becomes positively appalling. As observed this year in the Chitpore Hospital it has been 30.71 per cent. of the admissions, and 43.58 of the sum of the deaths and recoveries. In the temporary Small-Pox Hospital for Natives in Bow Bazar Street in the year 1857 the total number of patients admitted was 121, and deaths fifty-four, giving thus 44.628 deaths per 100 of the admissions, or of the sum of the deaths and recoveries.

In spite of the vast number of unprotected cases (354 out of 627) this year the ratio of mortality has been only 43.58. Dr. Gregory says the extremes of mortality he had seen in the Small-Pox Hospital, London, were 15 and 42 per cent., the latter chiefly in epidemic years. Now my mortality is not much different from this; and, considering the circumstances of the two countries, and that while vaccination is the rule in England, it is here the exception, it is wonderful that the difference is not much greater.

A striking fact presented by Tables IV., V., and VI. is the gradual increase of the percentage of mortality in proportion to the length of the epidemic. This is explained by the relative proportions of Europeans and Natives in the different stages of the epidemic, and also of males and females. In the earlier part of the time embraced by this Report the Europeans preponderated over the Natives, and there were very few females. In the later weeks the Natives were nearly twice as numerous as Europeans, and the proportion of Native females was also increased. Now, as the death-rate is higher among the Natives than among the Europeans, it follows that with the increase of the former there was an increase also of the death-rate; and with the increase of the Native females a still further increase as they died oftener than Native males.

Another interesting fact which I wish to record is that not one case of infection occurred among the large number of persons employed in the Hospital.

#### 19.—Special Recommendations.

As this is the third time within a few years I have been honored with the charge of a temporary Small-Pox Hospital, I feel it to be a duty to offer some suggestions on this point. The great difficulty always felt whenever a Small-Pox Hospital is needed is in finding a suitable locality and a suitable house for it. Landlords are naturally unwilling to let their houses for such a purpose, because, being only temporarily required, they soon become tenantless as no one likes to live in a house which has once been used as a Small-Pox Hospital. Nor is it right in Government to resort to so questionable an expediency. Laws have been made to prohibit the practice of inoculation within the town, and to prevent Stable-Keepers from hiring out their vehicles for the use of Small-Pox cases. Why should not a stop also be put to the formation of Small-Pox Hospitals in houses set apart for private dwellings?

Then, again, could any dwelling-house, however large, have conveniently accommodated the vast number of patients we have had in the Chitpore Hospital this year? Where would be the advantages of an unlimited supply of water and pure air?

For these reasons I would submit the expediency of forming a permanent Small-Pox Hospital. Besides, the cost of a temporary one is very great, for the furniture, charpays, cots &c., have all to be got new and destroyed each time; and the inconvenience of erecting hasty accommodation is troublesome as well as expensive. I think there was good judgment in selecting the present site at Chitpore as proved by the issue, and I would recommend that this place with all its buildings and present establishment, with such alterations and additions as may be found necessary, be permanently retained.

This would avoid all the worry and anxiety heretofore experienced on the approach of an epidemic, and really save Government money. Such a Hospital could also be employed during cholera epidemics, when Small-Pox is not prevailing, for the reception of cholera cases which now dangerously overcrowd the other Hospitals in the town.

#### 20.—Conclusion.

In conclusion I beg to apologize for the great delay in submitting this Report, and to hope that its many imperfections will be kindly overlooked. I am only sorry that it is necessarily incomplete, as the epidemic is not yet over; but I trust the matters I have brought forward will nevertheless find some permanent record.

(Sd.)

S. G. CHUCKRABUTTY, M. D.,

Assistant Surgeon, in Medical charge, Small Pox Hospital.

The 20th April 1865.



APPENDIX.

I beg to insert in the Appendix the return for the week ending on the 20th April, showing three admissions from the Ship *Eagle Speed* lying at Port Canning. The disease seems to be spreading in that direction, for I have had other cases since then.

(Sd.) S. G. CHUCKERBUTTY, M. D.,

Assistant Surgeon, in Medical charge,

Small-Pox Hospital.

Weekly Statement of sick in the Small-Pox Hospital from Friday, 14th, to Thursday, the 20th April 1865.

Chitpore, 21st April 1865.

	EUROPEANS.						NATIVES.					
	Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.
Male	10	9	19	4	0	15	34	9	38	7	4	27
Female	2	0	2	2	0	1	9	1	10	4	1	5
Grand Total	12	9	21	6	0	16	43	5	48	11	5	32

European admissions during the week.

From Ship <i>Englishmen</i>	1
" " <i>Eagle Speed</i> of London	3
" Sailors' Home	3
" Medical College Hospital	1
" Entally	1
Total	9

Native admissions during the week.

From Chitpore	1
" Allipore	1
" Lall Bazar	1
" Fort William	1
" Cossipore	1
Total	5

(Sd.) S. G. CHUCKERBUTTY, M. D.,

Assistant Surgeon, in Medical charge,

Small-Pox Hospital at Chitpore.

From S. G. CHUCKERBUTTY, Esq., M. D., Assistant Surgeon, in Medical charge, Small-Pox Hospital, to J. ANDERSON, Esq., M. D., Deputy Inspector-General of Hospitals, Presidency Circle,—(dated the 27th April 1865.)

The undersigned begs to forward the following corrections of, and additions to, the items of the cost of the Hospital in consequence of accurate information just received from the Barrack Master's Department:—

Corrections.			Rs.	As.	P.
43 Cots, wooden frame, at Rs. 11 each	...	...	473	0	0
2 " iron frame, at Rs. 23 each	...	...	46	0	0
Difference between this and the estimated price	...	...	79	0	0
Additions.			Rs.	As.	P.
2 Serjeants' Chairs, at Rs. 4-8 each	...	...	9	0	0
1 Form with back	...	...	12	0	0
5 Lamps, Barrack, at Rs. 4-8 each	...	...	22	8	0
5 Burners, Glass, at 6 annas each	...	...	1	14	0
1 Table, small	...	...	15	0	0
1 Dispensary Table (not received)	...	...			
5 Wick-holders, at 1 anna each	...	...	0	5	0
1 Bath Slipper	...	...	13	0	0
10 Commode frames with pans, at Rs. 5-4 each	...	...	52	8	0
25 Bedside Tables, at Rs. 4 each	...	...	100	0	0
1 Toilet Table for a Writing Table	...	...	8	0	0
Addition to the estimated cost	...	...	316	3	0

### Services of the Police Levy under Major Pughe.

From LIEUTENANT-COLONEL J. C. HAUGHTON, Political Agent and Chief Civil Officer, Bootan Doar Field Force, to the Secretary to the Government of Bengal,—(No. 690, dated Julpigoree, the 16th May 1865.)

THE Police Levy under the Command of Major Pughe being now, I believe, about to be broken up, I beg to place upon record my very high sense of the services rendered by that Force.

2. The Police entered the Field simultaneously with the Doar Field Force and a small detachment from it occupied the Booteah Posts at Gopalgunge and Domohony before the arrival of the Troops at those places.

3. Throughout the campaign, in addition to the duties properly belonging to them, they have shared all the dangers and fatigues of the Regular Troops.

4. What a small body of Bengal Police under Captain Macdonald did on the occasion of the first capture of Dewangiri; how they, in fact, actually captured the place prior to the appearance of the Troops is a matter of history, and has been, I believe, fully reported to the Government by Mr. Metcalfe while under my orders; the subsequent services of the Police in Assam will have been brought to notice by the Governor General's Agent.

5. The Frontier Post at Sipchoo was made over by the Military Authorities and held by the Police under Captain Gordon till, by order of Brigadier-General Dunsford, it was evacuated and the stockade destroyed.

6. The Police, shortly after their capture, occupied Chamoorchee, which Post they have held continually and held to this hour. Shortly after our acquiring the place a Constable greatly distinguished himself. He was attacked by three Booteahs while on sentry at night and mortally wounded, but he resisted the enemy successfully, drove them off, and held his post till duly relieved by the picket which came to his aid.

7. When the Booteahs appeared in force upon the Frontier the Police at Chamoorchee, now

under the Command of Major Pughe, behaved in a manner worthy of the highest praise. Aided by a portion of the 80th Native Infantry and guns under Captain Fluxham, they went forth and drove the enemy from a very strong position they had taken up in front of Chamoorchee, and Major Pughe infused so much spirit into his men, and exerted himself so zealously in rendering his position defensible, that I never had the least anxiety regarding its safety. The Officers and men with scarce any external aid stockaded the position, so that had the enemy attacked it their defeat was certain. In this the Police set an example well worthy of imitation by the Regular Troops.

8. Subsequently the enemy having taken up and fortified for themselves a position in front of Chamoorchee, the Police joined the Force under Brigadier-General Tytler in putting them to flight.

9. Throughout the campaign the Police have furnished escorts for provisions proceeding to the front, and have performed numerous duties heretofore discharged by the Troops for themselves.

10. Major Pughe and the Officers and men of the Police Levy have rendered services which I trust may be honorably remembered by the Government.

From S. C. BAYLEY, Esq., Junior Secretary to the Government of Bengal, to the Inspector-General of Police, Lower Provinces,—(No. 8800, dated the 2nd June 1865.)

I am directed to forward to you the accompanying copy of a letter, No. 690, dated the 16th ultimo, from the Political Agent and Chief Civil Officer, Bootan Doar Field Force, and to request that you will be so good as to convey to Major Pughe and to the Officers and men under his command the cordial thanks of Government for the excellent manner in which they have performed the duties entrusted to them in the Dooree.

2. I am to add that the thanks of Government have already been conveyed to Captain Macdonald and the men under his command.

## First Quarterly Inspection Report of the Eastern Bengal Railway.

Report of the Inspection of Eastern Bengal Railway, for the first Quarter of 1885, by LIEUTENANT C. H. LEARD, R. E.,  
Deputising Deputy Consulting Engineer to Government  
of Bengal, Railway Department.

I LEFT Sealdah on the 19th of April by the 7-40 A. M. Train, which reached Koochtee exactly at 12-45, the appointed hour, and I examined each Station in all eighteen, at which the train stopped. My report is submitted under the prescribed heads.

### I.

The line is in very good order generally, but one spot for a short distance near Parodah was noticeably rough, which is explained by the embankment having given some trouble by slipping. The fencing is in good order and so are the Station buildings generally. The goods sheds at Ramnuggur, Chogdah, &c., the roofs of which were removed by the Cyclone, are approaching completion.

### II.

The fuel used on the line is the East Indian Coal Company's coal, the quality of which is fair and the supply ample. There is no difficulty with regard to the supply of water.

### III.

At Sealdah the public accommodation is ample, but it would be convenient if seats were provided. At present there are none. Benches with backs would cost little and would answer every purpose. The sanitary arrangements here are certainly not good. There are two water-closets and four urinals. These are offensive, and the water-closets were, when I inspected them, in the most filthy state. The water, I am told, will not flow. It might, I should think, be easily made to flow, but if there is any serious difficulty about this, there is no excuse for neglecting to keep the place clean. If water-closets do not answer, commodos should be substituted; there should be at least four times as many commodos as there are at present water-closets. Separate provision should also be made for the Railway employes, and from the offensive smell of even the cleanest latrines on this line, I think they should never be absolutely on the platform but a little to the rear of it and connected by a covered way. It should also be strictly enforced that sweepers, after the departure of each train, visit and clean the necessaries, and that these are used only for the purpose for which they are constructed, and are not made receptacles for greasy buckets, &c., as at Sealdah.

With the exception of the fourth class Stations, of Dinn-Dinn, Sodepoor, &c., which consist simply of Ticket houses, all the intermediate Stations are on the same pattern: the accommodation for Europeans is ample generally, but there is an absence of seats. At Bugroobah, the Station for Kishnagur, a Dāk Bungalow is building by order of the Commissioner. The latrines consist of five urinals and two commodos, and these, as the number of European travellers is small, are little used and are consequently in fair order. They are indecently open to the public. Folding doors, unless shutting by means of a counterpoise, are not efficient screens, (in one instance there were no doors,) and the interior

arrangements are deficient both in size and privacy; the present number of European travellers is so small that this last objection is of less importance than it might be. No separate provision is made for the Natives, which should be the case at least at one of the Stations, where the trains stop to water.

There are notice boards at all the Stations, but these in many instances, instead of being fixed in their proper places above the doors of the rooms, are leaning against the wall. This is also the case with some of the boards on which the names of the Stations are painted, and in no instance are these announcements made in the vernacular, which they certainly ought to be. Vernacular time-tables should also be suspended outside the Station and on the platforms, and the information given regarding fares should be full and distinct. Without such tables there are great facilities for charging higher fares than those fixed by the Railway Company. At Koochtee the ordinary waiting accommodation is not sufficient, and here, as elsewhere, benches are required. The latrines though apparently clean are very offensive. At a large Station like this, where passengers are frequently detained, and where there are commodos and not water-closets, the latrines should undoubtedly be detached.

The general arrangements, indeed, for European passengers who by any misfortune happen to be detained at Koochtee are very bad and inconvenient. Three small rooms without punkahs, which should be either ladies' or gentlemen's waiting rooms, and even then would be small, have been made over by the Railway Company to the Managers of the Great Eastern Hotel, who have done as little as possible to make them decently comfortable.

The Great Eastern Hotel also provides food, which is worse than that furnished at a Dāk Bungalow and is charged for at a much higher rate. This food may be eaten either in his bedroom, if the passenger is fortunate enough to secure one, or in a large hall, half of which is boarded off for the ticket clerks and half used as a refreshment room. In this there are no punkahs, and there is no cleanliness; and as the room is the only passage from the platform to the Station entrance, and is also apparently resorted to as a liquor bar by all classes, it is quite public and entirely unfit for ladies. From enquiries which I have made, I find that the receipts of the Great Eastern Hotel Company do little more than cover their expenditure, and that, therefore, there is no hope of an Hotel being erected by private enterprise. I have accordingly conferred with the Commissioner of Nuddea, who has agreed to recommend that a Dāk Bungalow be constructed at Koochtee by Government, and the entering of this Bungalow might, if thought desirable, be managed by private agency, Government entertaining merely bearers, bhecties, &c.

### IV.

The discipline of the Station and Train Establishments is good. The Guards and Policemen wear uniforms. A very good arrangement obtains on this line. In addition to the English Guards two Native Guards, whose duty it is to look after the Native passengers, travel by each passenger train, and they are found to be very efficient in checking the unnecessary crowding of carriages. I counted the passengers in several carriages and



the general number was between 40 and 50. The greatest number I saw in any carriage was 63. The passengers were by no means crowded, and the proof of this is that the greater number were lying down. From what I saw I should say that carriages without seats are the most convenient and the most comfortable for Natives. If seats are added, passengers will not be able to lie down, and in sitting down after their own fashion seats are not more comfortable for them than a floor.

## V.

Specific complaints there are none.

## VI.

The late trains return for this quarter has not yet been received, so that the information on this point cannot, I regret to say, be furnished with this report.

## VII.

The condition of the rolling-stock is now under the consideration of Government, and a large addition is contemplated, as what exists is quite insufficient for the traffic. The new wagons will, by a small increase to their internal dimensions, be capable of carrying twice as much jute, (one of the principal articles of traffic,) as the old wagons, which being built on the English pattern, without any reference to the size and shape of the bundles in which jute is packed, are very bad economizers of space. Of eight lines of rails in the Station, all of which ought to be devoted to passenger traffic, it has been found necessary to give up six entirely to goods; there is, in consequence, only one platform for both the arrival and departure of passengers, and spare carriages, which ought to be under cover, are compelled to be left out in the open. An extension of the goods sheds, which has been recommended to the Government of India for sanction, will remove these difficulties. The necessity of these extensions affords ground for a very hopeful view of the prospects of this line, and the more so as the difficulties arise, not from any temporary or spasmodic cause, but from the legitimate development of the Eastern Bengal trade.

## VIII.

The maximum detention of goods at Koshtee appears to be about 40 hours, and at Sealdah about the same time. At the intermediate Stations the traffic, which is chiefly of sugar, is very small, and there is no detention. Indeed, nearly all the traffic is through from Koshtee to Calcutta, which makes the working of it exceedingly convenient.

## IX.

The chief articles of traffic are jute, either in drums or gunny-bags, and grain. The amount of goods arriving at Koshtee daily varies from 1,500 to 2,000 maunds.

## X.

There was only one accident on the Eastern Bengal Railway during the quarter. A drunken Private of the East Indian Regiment was resting on the side of the rails and was killed by the blow of a passing Engine.

From F. PRESTAGE, Esq., Agent, Eastern Bengal Railway Company, to Consulting Engineer to Government Bengal Railway Department, (No. 1007, dated 17th May 1865.

I HAVE the honor to acknowledge receipt of letter No. 658G., dated 13th inst., forwarding copies of Report of the Inspection of the Eastern Bengal Railway by the Officiating Deputy Consulting Engineer, and to request that you will make it known to the Hon'ble Lieutenant Governor that his requests with reference to the sanitary condition of the latrines on this Railway have already been complied with.

From observations that I have repeatedly made, and from the fact of the late Sanitary Commission and other Government Officers when inspecting the line not having complained, I have every reason to hope the Officiating Deputy Consulting Engineer inspected the latrines under exceptional circumstances.

I quite concur in all the Officiating Deputy Consulting Engineer says against such places being situated on the platforms, for no amount of cleanliness and care will prevent their being offensive in this climate, and arrangements will be made to remove them as soon as possible; but I cannot help observing that the Government Officers should share the blame for their being placed in such a position, as they had much more experience of the effect of such places in this climate than the Company's Engineers.

With regard to the concluding portion of paragraph 3, it was resolved when the Sanitary Commission inspected the line that a latrine for Natives should be built at Ruggoolah, and the work is in hand.

The suggestion of the Officiating Deputy Consulting Engineer that the names of the Stations should be painted in the vernacular has been anticipated, the notice boards at Stations should most certainly have been re-fixed since the cyclone, but some allowance must be made, as the Engineering Department experienced difficulty in getting sufficient workmen for more necessary works.

I admit, the arrangements of the Great Eastern Hotel Company are by no means so perfect as I could wish, but they are as perfect as an experimental Hotel in a building not adapted to the purpose can be expected to be.

I shall be glad to hear that the Government determine to build a Dik Bungalow at Koshtee as suggested by the Officiating Deputy Consulting Engineer, for there can be no doubt the accommodation is required, and it is more within the province of the Government than the Railway Company to provide it.

I cannot but think the Officiating Deputy Consulting Engineer expected more comfort and luxury at Koshtee than most other travellers, and more than the Great Eastern Hotel Company can afford to provide for casual passengers, for this Branch Hotel has now been open upwards of two years, and I have only received one complaint, and that was that it closed too early in the evening.

The Officiating Deputy Consulting Engineer is very far out in his estimate of the quantity of goods that daily arrive at Koshtee, it varies from 7,000 to 15,000 maunds, and during the past three months has averaged 12,500 maunds per diem.

# First Quarterly Inspection Report of the Calcutta and South-Eastern Railway.

Report of the Inspection of the C. and S. E. Railway for  
the first Quarter of 1865, by LIEUT. C. H. LEARD, E. E.,  
Officiating Deputy Consulting Engineer to Government  
of Bengal, Railway Department.

I MADE the inspection of this line on the 2nd  
of May. The report is submitted under the pre-  
scribed heads.

## I.

The maintenance of the line and the general  
condition of the road, fencing, and Station build-  
ings is good. At all the Stations, with the ex-  
ception apparently of Gorredoh, there are boards  
with the name of the place in Roman, Bengalee,  
and Persian characters. Time-tables, as a rule,  
are placed in a conspicuous place in each Station,  
but the information is only in English. It should  
also be given in the vernacular, as the passengers  
are almost entirely Natives.

## II.

The quality of the fuel is fair, and the supply  
of water sufficient.

## III.

The Station at Sealdah is temporary, and as  
such its arrangements are fairly good. Benches  
with backs placed upon the platform would be a  
convenience. At the intermediate Station there  
is no accommodation, none being necessary. At  
Canning seats are required. Special attention by  
means of a signboard is drawn to a ladies' waiting  
room at this Station. This has none of the com-  
forts or conveniences which it should have, and  
although the Canning Station is temporary, and  
the place is not largely visited by ladies, yet as the  
Railway Authorities think a ladies' waiting room  
necessary, they should make it more comfortable  
than it is. The latrines at this Station though  
generally clean are not good. The goods shed  
which has lately been finished has as yet no doors,  
and the goods are consequently liable to be stolen.

## IV.

The discipline of the Station and establish-  
ments appears good. It would be better if the  
Guards were provided with uniform, so as to be  
at once distinguished by passengers.

## V.

There are no specific complaints.

## VI.

The general working of the line has been good,  
the average want of punctuality of a train during  
the quarter being less than 3 minutes.

## VII.

The condition of the rolling-stock and its fitness  
and sufficiency for carrying the traffic has been

fully brought to the notice of Government by the  
Consulting Engineer so recently, that reference  
to it here is unnecessary.

## VIII.

At Canning goods have, for want of sufficient  
stock, been detained two days, which is the max-  
imum.

## IX.

The traffic is, it may be said, entirely through.  
The monthly average from Canning has been about  
4,800 maunds, and to Canning about 80,000  
maunds. This last being almost entirely rice for  
shipment, whilst the up-traffic to Calcutta, was of  
a varied character, consisting of rice, hay, jute, &c.

## X.

There have been no accidents during the  
quarter.

# First Quarterly Inspection Report of the Nulhattee and Azimgunge Line, Indian Branch Railway Co.

Inspection Report of the Indian Branch Railway Line from  
Nulhattee to Azimgunge by MAJOR J. HAYDEN, E. E.,  
for the first quarter of 1865, (dated Calcutta, the 6th  
May 1865).

I INSPECTED the line between Nulhattee and  
Azimgunge on the 7th April 1865 and submit my  
report under the usual heads.

(1.) *State of the line and fencing.*—The line  
and permanent way are in excellent order. The  
Company are bound by their agreement to keep  
up the cart road which runs alongside their line.  
This requires looking to, for nothing appears to  
have been done towards dressing the surface of  
this road since I formally made it over to the  
Company in the month of August 1864.

A good deal of work has been done in fencing  
the line since I made it over, but without much  
real benefit to the public. It was pointed out  
clearly to the Company that it was considered  
necessary that the fence on the north side of the  
line should be put up at once, so as to separate  
the line of Railway from the cart road. The  
wishes of Government have not been attended to  
in the least; the fencing on the south side of the  
line, where it is comparatively useless, has been  
completed in a fairly efficient manner, while that  
on the north side has not been touched. The  
Resident Engineer informed me that he had the  
whole of the materials for this fence ready, and  
that he only required the order of the Agent to  
commence putting it up. The completion of this  
fence should be insisted on before any portion of  
the sum paid at the Custom House as duty on  
Railway materials imported by the Company is  
refunded to them, or before any portion of  
their subsidy is paid.

(2.) *Supply of fuel and water.*—Owing to the peculiar construction of the engines on the line nothing but English coal can be used. There is no difficulty in obtaining this at Nulhatee. The supply of water is abundant.

(3.) *State of the Stations.*—There is no Station at Nulhatee and passengers make use of the East Indian Railway Station. The Stations at Bokra and Azimgunge are mere corrugated iron sheds for goods, with small offices for the telegraph and ticket clerks partitioned off in the corners.

(4.) *Discipline of Station and Train Establishments.*—These are very small, but their duties appear to be carried on quietly and satisfactorily. The Guard is in uniform.

(5.) *Specific complaints.*—I have received no specific complaint.

(6.) *Punctual working of Trains.*—The distance run is small and the trains are punctual.

(7.) *Condition of the rolling-stock.*—The passenger carriages are of great length and open throughout their length, somewhat like the

American cars. They are not uncomfortable, but are deficient in roof ventilation. Each carriage runs on six wheels. They are somewhat flimsy in construction, but appear to answer very well for a low rate of speed.

The goods wagons are of various patterns, having been constructed at various times as experiments with a view of ascertaining how the requisite strength and capacity could be obtained with the smallest amount of dead weight and at the least cost. There is a corrugated iron wagon on six wheels which appears to be very good.

(8.) *Maximum detention of goods at the principal Stations.*—I am given to understand that goods are never detained beyond a few hours.

(9.) *Amount of goods carried, shewing chief staples.*—I regret to state that I have no information whatever as to the quantity or nature of the goods carried on this line.

(10.) *Accidents.*—No accident has occurred on the Nulhatee and Azimgunge line during the quarter.





# SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, JUNE 11, 1865.

## OFFICIAL PAPERS.

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### Report on the State of the Salt Market during the Fourth Quarter of 1864-65.

From T. BRYCE LANE, Esq., Junior Secretary to the Board of Revenue, Lower Provinces, to the Secretary to the Government of Bengal.—(No. 606, dated 26th May 1865.)

I AM directed by the Board of Revenue to submit the following Report on the state of the Salt market during the fourth quarter of 1864-65.

2. The quantity of Government Salt sold under Rowannahs issued by the Board amounted to maunds 29,245, as shewn in the margin, giving a monthly average of maunds 2,748, or

about maunds 28,882 less than the monthly average of the corresponding quarter of 1863-64. This further falling off in the sales must be again ascribed to the continued decrease in the price of the Liverpool Salt, the clearances of which during the quarter under review amounted to maunds

12,09,786 against maunds 8,89,008 in the corresponding quarter of 1863-64.

3. The sales of Government Salt from the Ghosry Golahs amounted to maunds 1,450 against maunds 1,800 in the previous quarter, and maunds 2,125 in the fourth quarter of 1863-64. The sales at Tumlook aggregated maunds 11,635 against maunds 37,100 in the last quarter: while those in Hidgelee amounted to maunds 16,910 against maunds 13,161 in the preceding quarter, and maunds 10,400 in the corresponding quarter of 1863-64.

4. In the third quarter of 1864-65 the sales in those parts of Bulloah which are within chowkey limits, and in Chittagong, appear to have amounted to maunds 11,927 and maunds 19,879 respectively, being about maunds 600 and maunds 2,000 in excess of the sales in the corresponding period of the previous year, and about maunds 700 and maunds 1,000 less than the sales in the preceding quarter.

5. The sales of Excise Salt during the quarter under review aggregated maunds 5,350 against maunds 2,299 in the previous quarter, and maunds 13,045 in the fourth quarter of 1863-64.

6. The quantities of Salt which have been dispatched into the interior of the country *via* the border chowkeys of Ballikhat up the Hooghly and Geraghaut *en route* to the Goorni, and by the East Indian and Eastern Bengal Railways, are shewn in the following Comparative Statement:—

Period.	Quantity which passed Ballikhat.	Quantity which passed Geraghaut.	Quantity dispatched by East Indian Railway.	Quantity dispatched by the Eastern Bengal Railway.
	Maunds.	Maunds.	Maunds.	Maunds.
Fourth Quarter of 1862-63	1,52,425	3,24,799	1,08,442	.....
Ditto 1863-64	2,15,954	3,30,141	1,21,508	3,758
Ditto 1864-65	1,67,458	.....	248,610	964

N. B.—Details not yet received, but will be separately reported.

7. The importations and clearances of Sea-imported Salt during the quarter are shown comparatively in the following Statement :—

Description of Salt.	FOURTH QUARTER OF 1862-63.		FOURTH QUARTER OF 1863-64.		FOURTH QUARTER OF 1864-65.	
	Imported.	Cleared.	Imported.	Cleared.	Imported.	Cleared.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
Liverpool Pungah ...	17,31,832	11,83,983	16,26,528	8,83,008	10,12,041	12,08,486
Foreign Kurkutah ...	19,142	61,431	1,19,240	1,00,218	23,597	23,205
India Ditto ...	1,36,435	2,16,022	1,37,975	1,94,354	1,41,654	1,73,620
Total ...	18,87,409	14,61,436	18,83,743	11,87,578	11,77,292	14,55,617

Large clearances were effected in the last days of March in anticipation of a rise in duty.

8. The following are the details of the importations and clearances of Indian Kurkutah given above :—

Exporting Port.	1862-63.		1863-64.		1864-65.	
	Imported.	Cleared.	Imported.	Cleared.	Imported.	Cleared.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
Bombay ...	1,06,256	1,50,583	1,06,564	1,20,684	1,36,684	1,20,807
Kurrachee ...	...	83,526	23,411	33,170	...	13,494
Madras ...	30,179	31,961	...	22,450	5,000	...
Banore ...	...	...	...	5,400	...	...
Cavelong ...	...	...	...	4,378	...	...
Cocanada ...	...	...	8,000	8,074	...	...
Scinde ...	...	...	...	...	...	39,325
Total ...	1,36,435	2,16,022	1,37,975	1,94,354	1,41,654	1,73,626

9. The shipments of Liverpool Salt appear from published market reports to have been in

January 1865 ...	Tons 5,550
February " ...	" 4,593
March " ...	" 1,157

This decline in the shipments is probably owing to the fall in the price of this Salt at the close of 1864, and no material increase can be anticipated under the present position of the Calcutta market.

10. The price of Liverpool Salt, which, at the close of last January, stood at Rupees 46, fell gradually to Rupees 37 towards the end of February, when it again commenced rising until it reached Rupees 50 towards the end of March. This appears to have been the highest point that prices have reached since the middle of November last. They have again taken a downward tendency and stood at Rupees 38 only at the close of the quarter.

11. Madras and Bombay Kurkutah have both gradually declined in price from Rupees 40 and Rupees 30 respectively in the beginning of

February, to Rupees 37 and Rupees 22 at the end of the quarter. Kurkutah from Madras is being imported and bonded at Balasore, but no importations have as yet been reported from Okittagong, where the Government stock is now less than a year's local consumption.

12. The total quantity of Salt available on private trade at the several Madras Depôts on the first day of each of the three months of the quarter under consideration, and of the corresponding quarter of the two previous years, is exhibited below :—

Date.	1862-63.	1863-64.	1864-65.
	Maunds.	Maunds.	Maunds.
1st February ...	11,64,165	3,82,756	3,55,398
1st March ...	12,55,856	4,73,547	7,25,326
1st April ...	13,49,351	4,11,427	7,06,348

13. The approaching July sale will dispose of all the Depôt Stocks.



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WEDNESDAY, JUNE 21, 1865.

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#### Report on the State of the Salt Market during the Fourth Quarter of 1864-65.

From T. B. LANE, Esq., Junior Secretary to the Board of Revenue, Lower Provinces, to the Secretary to the Government of Bengal.—(No. 697, dated the 8th June 1865.)

In continuation of my letter No. 605, date 26th ultimo, I am directed to report that the quantity of Salt which passed the Border Chowkey of Goraghaut en route to the Goral during the quarter ending 30th April last was maunds 5,08,523.

#### Report of the Cultivation of Cinchona at Darjeeling during the Month of April 1865.

From T. ANDERSON, M.D., M. D., Superintendent of the Botanical Gardens, and in charge of Cinchona Cultivation in Bengal, to S. C. BAYLEY, Esq., Junior Secretary to the Government of Bengal.—(No. 1, dated Darjeeling, the 22nd May 1865.)

I HAVE the honor to submit the following Report on the cultivation of Cinchona at Darjeeling during the month of April 1865:—

Report for the Month of April 1865.

The weather during the first fortnight of April differed little from the weather that prevailed during March, but foggy and cloudy days were commoner.

With the exception of a slight thunder storm on the 13th no rain fell until the 14th. After that date rain fell on fourteen days to the amount of 11.13 inches, or the total rainfall for the month. The latter part of the month of April was therefore very moist and warm and highly favorable to growth.

At the fourth plantation the mean maximum temperature during the month was 74° 5, the mean minimum 60°, and the monthly mean temperature 68° 5.

At the fifth and lowest plantation the mean maximum temperature was 85° 4, the mean minimum 62° 3, and the monthly mean 73° 0. These figures indicate a great increase in the minimum temperature as compared with last month, while the mean maximum temperature at the fourth plantation has fallen slightly below that of March. These changes in the relation of the two extreme temperatures have resulted in a great increase of the mean temperature of the month.

2. The growth of the plants has everywhere been most satisfactory, and especially at the lowest plantation the condition of the plants of all species could hardly be surpassed.

The plants are covered with luxuriant foliage and the largest are sending out vigorous branches from the axils of the three or four upper pairs of leaves.

3. The total number of plants and partially rooted cuttings of all species was 49,486 on the 30th April. The number permanently planted out was 3,256. The number of plants added during the month to the number to be retained as stock plants was 9,520; all of these belonging to Cinchona Officinalis were planted in beds in the open air.

The increase by cuttings during April far exceeds the number obtained. Since the commencement of the experiment 12,104 cuttings of all species were made. None of these are buds, only vigorous shoots were used, as I consider it preferable to have a healthy stock than a large monthly increase of cuttings taken from over-pruned plants. The 7,214 cuttings made during March have all rooted and are ready to be potted off as soon as the Establishment have completed the more urgent work of preparing ground for the rapidly increasing stock of plants.

4. In the Report for the month of February I stated that an experiment had been made to ascertain the difference in the number of cuttings obtained from plants growing under glass and those growing in the soil and fully exposed. After two months it has been found that the plants under glass yield a larger number of cuttings than plants entirely unprotected do. The proportion is three to five. No general reliable results can be obtained until the experiment has been carried on for a year; during the rains

the plants in the open air will grow most luxuriantly and will give a much larger proportion of cuttings than they have done during the dry season.

5. The operations at Rungbee during April, in addition to the making of cuttings and the planting in the open air beds of 9,820 plants, consists of planting *Cinchona Pahudiana* in permanent plantations, making daffies in nurseries and plantations and repairing the foms, all of which were much damaged during the heavy and sudden falls of rain occurring during the latter part of the month.

6. A new road giving access to the southern slope of the spur has also been finished during the month. The nursery for the distribution of *Cinchona* plants has been commenced during the month by 1,000 cuttings of *Cinchona Officinalis* having been placed in it.

Tables showing the number, distribution, and growth of *Cinchona* plants in the Government plantation at Darjeeling on the 1st May 1865 :

*Number and Distribution of Cinchona Plants in the Government Plantation at Darjeeling, 1st May 1865.*

NAME OF SPECIES OF CINCHONA.	Number in permanent Plantation.	Number of Stock Plants for propagation.	Number of Seedlings or rooted Cuttings in Nursery beds for permanent Plantation.	Number of rooted Cuttings in cutting beds.	Number of Cuttings made during the month.	Total Number of Plants, Cuttings, and Seedlings.	REMARKS.
C. Succirubra ... ..	389	4,391	None	2,250	3,830	10,950	
C. Calisaya ... ..	None	23	.....	14	24	61	
C. Micrantha ... ..	15	929	.....	350	260	1,554	
C. Officinalis, including varieties ... ..	690	18,689	.....	4,600	8,000	31,979	
C. Pahudiana ... ..	2,162	None	2,930	None	None	5,092	
Total ... ..	3,256	23,962	2,930	7,214	12,104	49,458	



TABLE showing the growth of Cinchona at the Rangbet Plantation near Darjeeling during April 1865.

NAME.	Number.	1st PLANTATION, ALTITUDE 4750 FEET.						2nd PLANTATION, ALTITUDE 4360 FEET.						3rd PLANTATION, ALTITUDE 3715 FEET.						4th PLANTATION, ALTITUDE 2500 FEET.						5th PLANTATION, ALTITUDE 1235 FEET.						
		Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	Date of planting.	Height in inches when planted.	Height on 1st April.	Height on 1st May.	Growth in April.	
C. Saccubra	1	1st Dec.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C. Microcarpa	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C. Officinalis	11	16th Dec.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C. Fendleri	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

DARJEELING, The 1st May 1865. T. ANDERSON, M. D., Superintendent, Botanical Gardens, and in charge of Cinchona Cultivation in Bengal.

### Report of the Effects of the Cyclone of the 5th October on the Botanical Gardens.

From T. ANDERSON, Esq. M. D., Superintendent, Royal Botanic Gardens, to the Secretary to the Government of Bengal,—(No. 70, dated the 1st May 1863.)

I HAVE the honor to submit a Report of the damages sustained by the Botanical Gardens in the Cyclone of the 5th October 1864. The number of trees uprooted is so great that the labour of ascertaining the number of specimens of the different species destroyed was not completed until the first week of March. This list had then to be arranged systematically, and the antiquated nomenclature still used by the European and Native Gardeners had to be altered for that which I have adopted in the recently published Catalogue of plants cultivated in the garden. Without the aid derived from the Catalogue this Report could not have been submitted in its present shape under a year.

2. The history and general character of the Cyclone as it occurred at Calcutta have been repeatedly narrated and are so well known to every one that no description is required here. As experienced in the Botanical Gardens, the Cyclone differed in being somewhat more violent than in Calcutta, and the influence of the storm-wave extended more inland. The greater fury of the storm in the Botanical Garden is accounted for by the garden being nearer the centre of the Cyclone than Calcutta, but principally by the open surface of the river, across which the gale at its height blew diagonally, and thus struck the garden with a force unbroken for the space of a mile by any obstacle whatever. Few trees fell before 11 o'clock on the 5th October, and almost none after 4-30 p. m. At 4 o'clock the great specimen of *Adansonia digitata*, the Baobab tree of Africa, was uprooted and fell with a crash that caused vibrations in the earth which were felt at a distance of some hundred yards. This tree, which had withstood the greatest force of the gale, seems to have at last given way from its roots having become loosened in the soil by the storm-wave, whose waters rose to a height of four feet on the trunk of the tree. Three gigantic specimens of *Casuarina equisetifolia*, the oldest of the species in the garden, and none of them less than 150 feet in height, fell comparatively early in the storm; one of them was seen in the act of falling about 11 A. M. Many trees, but especially *Casuarina equisetifolia*, and young specimens of teak, were not uprooted, but their stems were broken across fifteen or twenty feet above the ground, while every branch was wrenched off, and they are now nothing but bare poles without a leaf. The greatest damage to the garden was caused by the storm-wave, which broke over the low embankment protecting the garden towards the river at all the lower parts. This wave laid the greater part of the garden under water, in some places to a depth of six or seven feet. By it the river bank was injured, and in some places, where the soil is sandy, much earth was washed into the river and lost. Three large breaches were formed in the river bank, two were caused by ships being blown into the garden with great violence, while the storm-wave was at its highest point. The earth, loosened by the weight of the vessels, was washed away, and at the distance of twenty feet from the western side of my house a gap fifty feet long by twenty-seven wide and about

ten feet deep was formed. A larger and deeper breach was made by a French vessel being driven into the bank opposite the seed-house. At the point where the khal, which divides the garden near its centre, enters the Hooghly, the sluice-gate was carried away along with the culvert, forming a gap about eighty feet in width, through which the tide flowed into the garden and the rice fields to the north. This has caused a large deposit of silt in the khal. The storm-wave rushed over the garden like a torrent sweeping away the gravel (broken brick or khesak consolidated by soorkee) from all the roads at a right angle to its course and strewing it over the lawn and on the flower beds. Nearly two miles of road have been much damaged, while the road on the river embankment, which extends from the great khal to Bishop's College, has been almost entirely destroyed. This wave also broke into the long chain of tanks whose surplus waters are drained into the river about 200 yards below my dwelling-house. The sluice-gate was broken by the pressure of the water, whose sudden rise carried away the parapets of the second bridge over the nulla connecting two of the tanks, and further on destroyed an old wooden bridge, lifting it off its masonry supports, which were thrown down. This devastating wave overthrew almost every shrub and small tree that had withstood the fury of the wind, loosened and swept away the soil about the roots of large trees, and thus caused many of them to fall even after the great force of the storm was exhausted. The garden was covered with straw brought up by the tide and storm-wave from the villages below: many hundred cart-loads of straw were collected and burned some weeks after the Cyclone. Timber and rubbish of all kinds were scattered every where, and even a portion of the helm of a ship was carried a quarter of a mile into the garden, and was found at the base of the large tree of *Gmelina arborea* opposite the dwelling-house of the Gardener of the Agri-Horticultural Society. Near this a log of mahogany four feet in diameter and fifteen feet long was overturned by the storm-wave, and near the centre of the garden another log two feet thick and twenty feet long was carried some distance by the receding wave.

3. The above is a sketch of the principal features of the Cyclone as it occurred in this garden, but no description, however accurate or minute, could convey an idea of the devastation committed in the garden by this storm. The scene in the garden the morning after the Cyclone was most dismal. A thousand trees, many of them gigantic specimens and the pride of the garden, were prostrated, besides innumerable shrubs of which no count could be kept; nothing had been spared, and those trees that had not fallen were more or less stripped of their branches; some recorded as standing were mere bare poles without a branch. Not a vestige of a leaf, flower, or fruit remained in the garden. The lawn roads and the tanks were blocked up by trees and fallen branches. All the buildings suffered more or less damage, and every one not built of bricks and mortar was thrown down.

4. The buildings in the garden suffered as follows:—

#### *Superintendent's Dwelling-house*

This house from its exposed position suffered much damage. All the shutters and five of the large venetian screens in the verandah of the middle story were blown down, about twenty doors

were wrenched off their hinges, and most of the panes of glass in the doors of the south and east sides of the house were broken. The water of the storm-wave flooded the lower rooms of the house to a depth of five inches, but no damage was sustained except the rotting of mats by the deposit of silt which took place. The seed-house, being well sheltered by trees, received little damage; the sand plaster was, of course, stripped off the outer walls and a few panes of glass were broken. The floors of this building being raised four feet above the ground were not flooded.

5. The Head European Gardener's house was the only other dwelling-house that received serious damage. The second story of this house, composed of very strong mat walls supported on a parapet of masonry with brick pillars, was completely blown away. The property in the room was buried amid the ruins. A quantity of valuable Memoranda and the records of the last fifteen years of the Department under the Head Gardener were kept in this room. The greater part of these were destroyed from being buried under the thatched roof, and some were scattered over the garden and lost. The two other dwelling-houses suffered very little damage beyond the loss of one or two doors and large patches of sand plaster from the outer walls. The Visitors' pavilion, the extensive thatched building used as a conservatory for the Orchidaceous and other valuable plants and the raising of seeds, the Coolies' lines, and indeed all erections built of any other material than bricks and mortar were levelled with the ground. Much loss was sustained by the destruction of the thatched conservatory; all the plants it sheltered were buried under a mass of grass, or were broken by the posts and heavy wooden frame-work of the building. Many of the most delicate species of *Orchidaceae* were entirely lost, and the number of specimens of all species was so much reduced that now not half the fine collection of this family of plants remains. With a few exceptions, all the young plants raised from seed sown during the year were also killed by the falling of this shed.

6. In the nurseries of the stronger class of plants there were about 14,000 plants in pots when the Cyclone occurred: these were buried under the rains of the mahogany and mango groves, where the plants were kept for the sake of shade. I am glad to be able to report that nearly all these plants have been saved, although they had to be left ten days under branches and trees.

7. All the plants of *Vanilla* growing on the stems of mahogany trees were killed either by the falling of the trees to which they were attached, or by the violence of the wind. In the operations of grafting, ringing, and layering considerable loss, both of time and of a valuable stock of young plants resulted from the Cyclone. The only young plants were made by these processes during the year that escaped were tolerably complete set of grafts of the varieties of mango cultivated in the garden; these had been removed from the trees a few days before the Cyclone. In no others had the process been completed, and accordingly all were destroyed.

8. All the damage to buildings, to rare plants in pots, and to the nursery stock is of slight importance when compared with the wholesale destruction of trees, many of them the growth of

seventy years, and the pride and ornament of this garden. Had the entire collection of plants in pots been lost, the greater part could have been re-placed in a comparatively short time, whereas even half a century will not be sufficient to restore the specimens of trees destroyed by the storm. Many of them exist no where in cultivation except in this garden, and some of them are known to Botanists only by dried specimens and descriptions of those trees now lost. Many of the most picturesque parts of the garden resulting from the grouping of trees, or from well developed single specimens, no longer exist. In the tank avenue along the road from Kyd's Monument to the large bridge over the khul only two mutilated specimens remain. The trees in this avenue were sixty-nine years old. Out of sixty-seven mahogany trees thirty-one have been blown down, two of which were sent to this garden by the Court of Directors of the East India Company in 1798. These two trees had attained a circumference of thirty feet six inches and had produced seed for the last two years. The mahogany grove, consisting of trees forty-five years old, is destroyed. The *Casuarina* avenue planted by Dr. Wallich has suffered severely. Only four trees in it are standing, and these are much injured. Three of the originally introduced specimens of this species, and which were the parents of nearly all the *Casuarinas* near Calcutta, were blown down. The magnificent specimen of *Adansonia digitata*, whose diameter is twelve feet, fell towards the end of the storm after the storm-wave had passed over the garden. All the trees of *Amherstia nobilis* have been partially uprooted; they are supported merely by their branches, and all of them must be removed after young plants have been obtained from them by layering. The great Banyan received considerable damage, but fortunately on the north side, where the loss of the branches does not in the least spoil the contour of the tree. The Pinetam, containing many fine specimens of *Aracaria*, suffered much from the storm. Of about twenty-five specimens of *Aracaria* not one has been left with the main stem entire; in most of the trees nearly a third of the stem and branches remain. Among *Coniferae* the destruction of all the trees of *Pinus longifolia* deserves notice; also of a very large specimen of *Dammara orientalis* introduced from Amboina in 1798.

9. Among all this destruction I am glad to be able to report that *Cycadeae* and palms, and indeed *Endogeneae* generally, have escaped with little injury. Only two species of palms have suffered severely, one is *Areca catechu*, the common betelnut palm, of which hardly a specimen now remains in the garden, and *Arenga saccharifera*, most of the trees of which have been blown out of the perpendicular, although few of them have been uprooted. The great destruction of *exogeneae* by the Cyclone, while endogenous species escaped, produced a peculiar effect on the scenery about Calcutta. The country, as seen from the roof of my dwelling house, a height of 80 feet, appeared to be covered with three species of palms (*Cocos nucifera*, *Phoenix sylvestris*, *Borassus flabelliformis*) and bamboos.

10. There are many points of interest that suggest themselves as worthy of notice but they are too numerous to be included in a general report, and besides my engagements do not allow me time to enter on them. Some of the effects of

the Cyclone on the flowering and fruiting of trees for some months after the storm must not, however, be passed over. The destruction of the foliage of the trees and shrubs at an unnatural period, and indeed at the time when the trees had ceased to grow and were maturing the woody growth of the rainy season, has had a strange influence on some species. The most general effect has been the absence of flowers in spring and departures from the usual course of shedding of leaves. Some of the most striking cases are:—first, no flowers have been produced by the mango trees at the usual period in February and March. Up to this date (15th April) I have not seen a mango flower this year. *Butea frondosa*, of which four trees remain in the garden, has retained the leaves it produced in October after the gale and has not flowered at all. The normal condition of this tree is to remain leafless during winter and in March to flower profusely, after which the leaves appear. The same condition has occurred in *Butea parviflora*, *B. superba*, and *B. voightii*. *Bauhinia variegata* follows the same course as the species of *Butea*. This year, although it produced a second crop of leaves in October, unlike *Butea*, it lost those leaves in December, and the only two trees of it left standing flowered most abundantly at the usual time in March before the leaves appeared. *Terminalia Catappa*, and all deciduous species of *Ficus*, including *Ficus indica* and *venosa*, re-produced their leaves shortly after the Cyclone, losing this foliage as usual in the last fortnight of March and immediately acquiring their full leaf. *Bougainvillea spectabilis*, one of the most gorgeous sights of this garden in the beginning of March, has not flowered; one plant only produced about a dozen flowers. The half prostrate trees of *Amherstia nobilis* produced altogether only one abortive spike with sickly flowers, while two young plants that flowered freely last year, and are still standing almost uninjured, have shewn no flowers. *Journea asoca*, which yearly vies in splendour with *Amherstia nobilis*, produced only a few ill-shaped flowers, although some of the trees are apparently uninjured. A species of *Ulmus* (*U. roosa*?) a tree about 60 feet high, has for the last three years flowered regularly in the middle of March before the leaf buds; this year it has remained partially in leaf all winter and has produced only three or four flowers. The flowering or fruiting of trees for the first time in India shortly after the Cyclone may be accounted for by changes resulting from the sudden check given to growth, and specially to the ripening of wood in October. I do not, however, attach much importance to the two cases of this kind that occur to me; one is the flowering of *Diou edule* about two months after the gale, and of an old specimen of *Gustavia augusta*, which has been twenty years in the garden without flowering. It was partially up-rooted and lay at an angle of nearly 45 degrees and in this position in February it produced a large number of flowers, three of which have been followed by well formed fruits. Other similar cases may occur as the year advances.

11. Some trees have been killed by the mere force of the wind, or by the violent strain they have sustained; the pressure during the height of the storm is said to have been 120 lbs. on the square foot. Some species, especially of *Dipterocarpaceae*, *Guttiferae*, the genera *Dalbergia*, *Pterocarpus*, *Acacia*, *Arancaria*, and *Dammara* have their

stem covered with the exudations of resin or gum which have oozed through the bark on the upward flow of the sap in March.

12. There are very few species of trees in the garden of which specimens have not been thrown down; the only species that seem to have entirely escaped, and of which the specimens, with few exceptions, are unique, are—

*Dipterocarpus alatus*.  
*Cratogeomys Roxburghii*.  
*Flacourtia cataphracta*.  
*Hydnocarpus inebriens*.  
*Gynocardia odorata*.  
*Eriodendron orientale*.  
*Sterculia ornata*.  
 ——— *comosa*.  
 ——— *angustifolia*.  
*Visenia velutina*.  
*Hopea saginea*.  
*Acer oblongum*.  
*Ailanthus excelsus*.  
*Erythrina indica*.  
*Pterocarpus indicus*.  
 ——— *dalbergoides*.  
*Poinciana regia*.  
*Cassia nodosa*.  
*Pithecolobium bigeminum*.  
*Terminalia angustifolia*.  
 ——— *citrina*.  
 ——— *berryi*.  
 ——— *travancorensis*.  
 ——— *tomentosa*.  
 ——— *paniculata*.  
*Nauclea parviflora*.  
 ——— *cordifolia*.  
*Mimusops hexandra*.  
 ——— *indica*.  
*Diospyros sapota*.  
 ——— *embryopteris*.  
*Spathodea Bheedii*.  
 ——— *adenophylla*.  
*Vitex saligna*.  
*Camphora officinarum*.  
*Beilschmiedia Roxburghiana*.  
*Cryptocarya floribunda*.

13. The greater number of species of *Ficus* have also escaped. The powerful aerial roots of many of this species enable these trees to resist the most violent storms.

14. An endeavor was made to ascertain the number of specimens of trees that remain in the garden, but the time it was found that the work would occupy was larger than could be spared for more important investigations, accordingly, after examining about one-fifth of the extent of the garden, the work had to be abandoned.

15. It is apparent from this imperfect enquiry that at least one-half of the trees have been blown down, while nearly all that are standing are very much shattered.

16. In the following extensive list of trees uprooted by the Cyclone no account is taken of innumerable small trees and shrubs, nor of injuries to trees that may have been left standing; all such have been excluded from the list, which thus contains only species that have been thrown down and destroyed. The list contains 2,010 specimens distributed among 361 species, which is nearly the entire number of arborescent species in the garden.



*List of Trees uprooted in the Royal Botanical Garden, Calcutta, in the Cyclone  
of 5th October 1884.*

Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
<i>Dilleniaceae.</i>			
1	<i>Dillenia scabrella</i>	1	
2	" <i>retusa</i>	1	Grafted on <i>Dillenia scabrella</i> .
3	" <i>pentagyna</i>	1	
4	" <i>speciosa</i>	1	
<i>Magnoliaceae.</i>			
5	<i>Magnolia sphanocarpa</i>	1	Planted by Dr. Roxburgh.
6	<i>Michelia champaca</i>	1	
<i>Anonaceae.</i>			
7	<i>Alphonsea ventricosa</i>	1	Unique, introduced in 1797.
8	<i>Scagopetalum longiflorum</i>	1	
9	<i>Guatteria fasciculata</i>	1	
<i>Canellaceae.</i>			
10	<i>Canella alba</i>	1	
<i>Bixineae.</i>			
11	<i>Cochlospermum obovatum</i>	4	
12	<i>Bixa orellana</i>	2	
13	<i>Placourtia ferox</i>	1	
14	" <i>inermis</i>	1	The only original specimen of Dr. Roxburgh's planting left.
15	" <i>rotundifolia</i>	1	Unique.
<i>Tamariceae.</i>			
16	<i>Tamarix indica</i>	1	
<i>Hypericaceae.</i>			
17	<i>Ancistrolobus carneus</i>	3	
<i>Guttiferae.</i>			
18	<i>Calophyllum inophyllum</i>	5	
19	<i>Mammea siamensis</i>	1	
20	<i>Xanthochymus pictorius</i>	3	
21	" <i>daleis</i>	1	
22	<i>Garcinia Roxburghii</i>	3	No uninjured specimen left.
23	" <i>purpurea</i>	1	
24	" <i>cowa</i>	3	
25	" <i>cornea</i>	1	One uninjured specimen left.
<i>Dipterocarpaceae.</i>			
26	<i>Dipterocarpus laevis</i>	1	Unique, introduced before 1794.
27	<i>Shorea robusta</i>	2	One specimen remaining.
28	<i>Hopea odorata</i>	1	
<i>Malvaceae.</i>			
29	<i>Kydia calycina</i>	1	
30	<i>Hibiscus tortuosus</i>	1	
31	" <i>macrophyllus</i>	3	
32	" <i>tricuspis</i>	1	
33	<i>Theopesia populnea</i>	1	
34	<i>Adansonia digitata</i>	2	Two small specimens left.
35	<i>Bryonia malabaricum</i>	2	
36	<i>Ochreina Lagopus</i>	1	Unique, species lost.
<i>Stereuliaceae.</i>			
37	<i>Stereulia villosa</i>	3	
38	" <i>colorata</i>	1	
39	" <i>alata</i>	1	
Carried over		62	

Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	02	
	<i>Sterculiaceae.</i> —(Continued.)		
40	<i>Sterculia urens</i>	1	All large specimens lost.
41	" <i>foetida</i>	3	
42	" <i>parviflora</i>	1	
43	" <i>guttata</i>	1	
44	" <i>pallens</i>	2	
45	" <i>campanulata</i>	4	
46	" <i>populifolia</i>	4	
47	<i>Heritiera macrophylla</i>	1	
48	" <i>littoralis</i>	1	
49	<i>Kleinhovia hospita</i>	4	
50	<i>Pterospermum lanceifolium</i>	3	
51	" <i>aceroides</i>	2	
52	" <i>acerifolium</i>	1	
53	" <i>suberifolium</i>	1	
54	<i>Eriolena spectabilis</i>	6	
55	" <i>Candollei</i>	1	
56	<i>Guazuma tomentosa</i>	1	
	<i>Tiliaceae.</i>		
57	<i>Grewia asiatica</i>	2	
58	<i>Elaeocarpus longifolius</i>	1	
59	<i>Berrya Ammonilla</i>	3	
	<i>Linacae.</i>		
60	<i>Erythroxylon monogynum</i>	1	
	<i>Rutaceae.</i>		
61	<i>Xanthoxylon badrunga</i>	1	
62	<i>Clausena Sumatrana</i>	1	
63	<i>Feronia Elephantum</i>	2	
64	<i>Egle marmelos</i>	1	
	<i>Simarubaceae.</i>		
65	<i>Balanites Aegyptiaca</i>	1	Unique. A few seedlings raised last year remaining.
	<i>Burseraceae.</i>		
66	<i>Boswellia thurifera</i>	5	
67	<i>Garuga pinnata</i>	7	
68	<i>Balsamodendron Roxburghii</i>	1	
69	<i>Leuca indica</i>	1	
70	" <i>bengalensis</i>	1	
71	<i>Canarium geniculatum</i>	1	
72	<i>Filicium decipens</i>	1	
	<i>Meliaceae.</i>		
73	<i>Melia composita</i>	2	
74	" <i>sp.</i>	1	
75	<i>Azadirachta indica</i>	1	
76	<i>Epicharis exarillata</i>	4	
77	<i>Sandericum indicum</i>	1	
78	<i>Mallea Rothii</i>	1	
79	<i>Aglaia undulata</i>	3	
80	" <i>spectabilis</i>	1	
81	" <i>maddaporensis</i>	1	
82	<i>Milnea edulis</i>	1	
83	<i>Amoora Roupituka</i>	4	
84	<i>Wahura robusta</i>	1	
	Carried over	150	

Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	150	
	<i>Meliaceae</i> .—(Continued.)		
85	<i>Walsura piscidia</i>	1	
86	<i>Heynea trijuga</i>	1	
87	<i>Swietenia mahagoni</i> (old)	82	
88	" " (young)	12	These plants were 12 years old.
89	" <i>chloroxylon</i>	8	
90	<i>Soyimida febrifuga</i>	3	
91	<i>Chickrassia tabularis</i>	8	
92	<i>Cedrela Toona</i>	2	All the large trees lost.
	<i>Oleaceae</i> .		
93	<i>Olea scandens</i>	1	
	<i>Celastrineae</i> .		
94	<i>Euenymus grossus</i>	1	
95	" <i>glabra</i>	1	
96	<i>Celastrus fascicularis</i>	1	
97	<i>Eleodendron longifolium</i>	1	
98	" <i>glaucom</i>	1	
	<i>Sapindaceae</i> .		
99	<i>Cupania canescens</i>	1	
100	" <i>rapida</i>	1	
101	" <i>Madagascariensis</i>	1	
102	<i>Scoytalia mangifolia</i>	1	
103	<i>Schleichera trijuga</i>	1	
104	<i>Erioglossum edule</i>	3	
105	<i>Sapindus angustifolius</i>	1	
106	" <i>emarginatus</i>	3	
107	" <i>Saponaria</i>	2	
108	<i>Nephelium Litchi</i>	1	
109	" <i>longana</i>	1	
110	<i>Harpulia cupanioides</i>	2	
	<i>Salicaceae</i> .		
111	<i>Meliosma simplicifolia</i>	2	
	<i>Anacardiaceae</i> .		
112	<i>Rhus parviflora</i>	1	
113	<i>Mastigifera indica</i>	43	
114	" " (Singapore)	1	
115	<i>Bouea oppositifolia</i>	2	A few small plants left.
116	<i>Buchanania latifolia</i>	1	
117	" <i>angustifolia</i>	1	
118	<i>Melanorrhoea usitatissima</i>	8	One plant left.
119	<i>Schinus terebinthifolius</i>	2	
120	<i>Semicarpus Anacardium</i>	1	
121	" <i>conellifolia</i>	1	
122	<i>Holigarna racemosa</i>	3	
123	<i>Spondias</i> sp.	1	
124	" <i>lutea</i>	1	
	<i>Moringaceae</i> .		
125	<i>Moringa pterygonerita</i>	2	
	<i>Leguminosae</i> .		
126	<i>Aguti grandiflora</i>	1	
127	<i>Erythrina ovalifolia</i>	2	
128	" <i>stricta</i>	1	
	Carried over	315	

Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	315	
	<i>Leguminosae.</i> —(Continued.)		
129	<i>Eutea frondosa</i>	3	
130	<i>Pterocarpus marsupium</i>	5	
131	<i>Pongamia glabra</i>	3	
132	" <i>heterocarpa</i>	1	
133	" <i>tetraptera</i>	4	
134	<i>Dalbergia sissoo</i>	35	
135	" <i>zeylanica</i>	4	
136	" <i>frondosa</i>	1	
137	" <i>latifolia</i>	1	
138	" <i>suandena</i>	1	One much injured specimen remains.
139	" <i>sp. (Madras)</i>	1	
140	<i>Colvillea racemosa</i>	1	
141	<i>Poinciana regia</i>	2	
142	<i>Lebidibia coriaria</i>	1	
143	<i>Jonesia Asoca</i>	11	
144	<i>Tamarindus indica</i>	5	
145	<i>Hymenaea courbaril</i>	4	
146	<i>Phanera Richardiana</i>	5	
147	" <i>purpurea</i>	9	
148	" <i>parviflora</i>	1	
149	" <i>retusa</i>	2	
150	<i>Hardwickia binata</i>	4	
151	" <i>pinnata</i>	1	Unique.
152	<i>Parkia biglandulosa</i>	2	
153	" <i>Brunonia</i>	1	
154	<i>Prosopis spiciigera</i>	1	
155	<i>Cassia emarginata</i>	1	
156	" <i>fistula</i>	1	
157	" <i>grandia</i>	1	
158	" <i>Sumatranæ</i>	1	
159	<i>Xylia delabriformis</i>	2	
160	<i>Pithecolobium dulce</i>	5	
161	<i>Acacia seriata</i>	4	
162	" <i>tomentosa</i>	1	
163	" <i>catechu</i>	6	
164	" <i>sumdra</i>	1	
165	<i>Albizzia stipulata</i>	1	
166	" <i>chala</i>	1	
167	" <i>paludosa</i>	1	
168	" <i>Smithiana</i>	1	
169	" <i>odoratissima</i>	3	
170	" <i>diluta</i>	2	
	<i>Rosaceæ.</i>		
171	<i>Photinia bengalensis</i>	1	
172	" <i>eugenifolia</i>	1	
	<i>Combretaceæ.</i>		
173	<i>Terminalia chebula</i>	3	Terminalia have hardly suffered at all. Many specimens of all, except the unrooted species, remain.
174	" <i>tomentosa</i>	1	
175	" <i>catappa</i>	2	
	Carried over	463	



Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	468	
	<i>Ombrelaceae.</i> —(Continued.)		
176	<i>Terminalia</i> <i>Belericia</i>	1	
177	" <i>Arjuna</i>	3	
178	" <i>procera</i>	1	
179	" <i>sp.</i>	2	Unique, entirely lost.
180	" <i>oblonga</i>	1	
181	" <i>hialata</i>	1	
182	<i>Conocarpus latifolius</i>	2	Only a few small seedlings remain.
	<i>Rhizophoraceae.</i>		
183	<i>Carallia lucida</i>	9	
	<i>Lythraceae.</i>		
184	<i>Lagerstrœmia regina</i>	1	
185	<i>Byrsenima lucida</i>	1	
186	<i>Lafœnsia randolliana</i>	2	Two small specimens two years old remain.
187	<i>Duabanga sonneratioides</i>	1	
	<i>Alangiaceae.</i>		
188	<i>Alangium decapetalum</i>	1	
	<i>Myrtaceae.</i>		
189	<i>Eucalyptus resinifera</i>	2	
190	<i>Callistemon salignum</i>	3	
191	" <i>lanceolatum</i>	1	
192	<i>Metrosideros vern</i>	2	
193	<i>Eugenia geminiflora</i>	2	
194	" <i>jambolana</i>	6	
195	" <i>myrtifolia</i>	10	
196	" <i>malaccensis</i>	2	
197	" <i>pulehella</i>	1	
198	<i>Psidium pomiferum</i>	1	
199	<i>Melaleuca cajuputi</i>	1	
	<i>Samydaceae.</i>		
200	<i>Homalium tomentosum</i>	2	
201	" <i>longifolium</i>	1	
	<i>Araliaceae.</i>		
202	<i>Topidanthus calyptratus</i>	1	
	<i>Rubiaceae.</i>		
203	<i>Rondeletia tinctoria</i>	2	
204	<i>Hymenodictyon thyrsoiflorum</i>	2	
205	<i>Naucllea endamba</i>	5	
206	" <i>macrophylla</i>	1	
207	<i>Randia rubiginosa</i>	1	
208	" <i>uliginosa</i>	4	
209	" <i>decussata</i>	3	
210	<i>Gardenia longispina</i>	1	
211	" <i>latifolia</i>	5	
212	" <i>turgida</i>	1	
213	" <i>sp.</i>	1	
214	<i>Ixora parviflora</i>	7	
215	<i>Canthium floribundum</i>	8	
216	<i>Morinda exserta</i>	1	
217	" <i>bracteata</i>	1	
	<i>Sapotaceae.</i>		
218	<i>Sapota Achras</i>	1	Several specimens remain.
219	<i>Sideroxylon aytonatum</i>	4	
	Carried over	567	

Number of Species	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	567	
	<i>Sapotaceae</i> .—(Continued.)		
220	<i>Sideroxylon inerme</i>	1	
221	<i>Bassia longifolia</i>	1	
222	" <i>latifolia</i>	1	
223	" <i>butyracea</i>	1	
224	<i>Imbricaria coriacea</i>	1	
225	<i>Mimusops elengi</i>	1	
226	" <i>kaki</i>	1	
	<i>Ebenaceae</i> .		
227	<i>Diospyros ebenum</i>	1	
228	" <i>montana</i>	4	
229	" <i>heterophylla</i>	1	
230	" <i>lanceolata</i>	3	
231	" <i>sp.</i>	1	
232	" <i>sp.</i>	1	
233	" <i>sp.</i>	1	
	<i>Jasminaceae</i> .		
234	<i>Olea europaea</i>	4	One much injured old tree remains.
235	<i>Visiania paniculata</i>	6	
236	" <i>robusta</i>	2	
237	<i>Olea myrtifolia</i>	1	
238	" <i>grata</i>	1	
239	" <i>glandulifera</i>	4	Probably lost, except as regards seedlings in pots.
240	<i>Linociera dichotoma</i>	3	
241	" <i>macrophylla</i>	8	
242	<i>Noronhia emarginata</i>	11	
243	<i>Nyctanthus arbor-tristis</i>	1	
	<i>Apocynaceae</i> .		
244	<i>Plumeria acuminata</i>	1	
245	" <i>alba</i>	1	
246	<i>Wrightia mollissima</i>	1	
247	<i>Alstonia macrophylla</i>	5	One tree left standing.
248	" <i>scholaris</i>	2	No large trees exist.
249	<i>Holarrhena antidysenterica</i>	4	
250	<i>Thevetia neruifolia</i>	1	
	<i>Loganiaceae</i> .		
251	<i>Strychnos potatorum</i>	1	
252	" <i>spinosu</i>	1	
	<i>Bignoniaceae</i> .		
253	<i>Stereospermum fimbriatum</i>	1	
254	" <i>sp.</i>	1	
255	" <i>sp. (Pegu)</i>	1	
256	" <i>chelonoides</i>	4	
257	" <i>anaeaeolens</i>	1	
258	<i>Spathodea amcaea</i>	3	
259	" <i>xylocarpa</i>	2	
260	" <i>crispa</i>	5	
261	" <i>cerrulata</i>	1	
262	" <i>stipulata</i>	1	
263	" <i>campanulata</i>	2	
264	<i>Calanthe indica</i>	3	
265	<i>Millingtonia hartsensis</i>	1	
	Carried over	689	

Number of Species	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	669	
	<i>Bignoniaceae</i> .—(Continued.)		
266	<i>Kigelia pinnata</i>	4	
267	<i>Crescentia alata</i>	4	
268	<i>Tecoma undulata</i>	3	Two small plants a year old remain.
269	" <i>serratifolia</i>	1	
	<i>Boraginaceae</i> .		
270	<i>Cordia myra</i>	1	
271	" <i>sebestena</i>	5	
272	" <i>lævis</i>	1	
273	" <i>tectonifolia</i>	1	
274	" <i>bantamensis</i>	1	
275	" <i>angustifolia</i>	1	
276	" <i>grandis</i>	3	
277	<i>Ehretia laevis</i>	1	
	<i>Verbenaceae</i> .		
278	<i>Githarexylon subserratum</i>	3	
279	<i>Tectora grandis</i> (old)	52	The majority of these is nearly seventy years old.
280	" " (young)	30	From fifteen to twenty-five years old.
281	" <i>ternifolia</i>	3	One specimen left.
282	<i>Premna spinosa</i>	2	
283	<i>Callicarpa arborea</i>	2	
284	<i>Gmelina arborea</i>	4	One injured specimen left.
285	" <i>asiatica</i>	1	
286	<i>Vitex alata</i>	1	
287	" <i>leucoxylon</i>	1	
	<i>Nyctaginaceae</i> .		
288	<i>Pisolitha inermis</i>	1	
	<i>Polygonaceae</i> .		
289	<i>Triplaris Americana</i>	2	
	<i>Proteaceae</i> .		
290	<i>Grevillea robusta</i>	4	All the old seed-bearing trees have been destroyed.
	<i>Aquilariaceae</i> .		
291	<i>Aquilaria agallochum</i>	3	
	<i>Santalaceae</i> .		
292	<i>Santalum album</i>	5	
	<i>Lauraceae</i> .		
293	<i>Cinnamomum malubathrum</i>	2	
294	<i>Tetranthera Roalburghii</i>	1	
295	<i>Tetrandenia foliosa</i>	3	
	<i>Celtideae</i> .		
296	<i>Ulmus integrifolia</i>	1	
297	<i>Celtis tetrandra</i>	2	
298	" <i>sinensis</i>	1	
	<i>Moraceae</i> .		
299	<i>Artocarpus Chaplashu</i>	1	
300	" <i>integrifolia</i>	4	The species is lost except a small seedling in a pot.
301	" <i>Lackoocha</i>	3	
302	" <i>ibesia</i>	3	
303	<i>Ficus artocarpifolia</i>	3	No large trees left.
304	" <i>indica</i>	1	
	Carried over	684	

Number of Specimens	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	884	
	<i>Moraceae.</i> —(Continued.)		
305	<i>Ficus conglomerata</i>	1	
306	" <i>Roxburghii</i>	1	
307	" <i>excelsa</i>	1	
308	" <i>religiosa</i>	2	
309	<i>Brosimum Alicastrum</i>	1	
310	<i>Streblus asper</i>	2	
	<i>Euphorbiaceae.</i>		
311	<i>Aleurites triloba</i>	1	
312	<i>Croton joufra</i>	2	
313	" <i>oblongifolium</i>	1	
314	<i>Cleidion Javanicum</i>	2	
315	<i>Trewia nudiflora</i>	2	
316	<i>Rottlera tinctoria</i>	1	
317	" <i>tetracocca</i>	1	
318	<i>Stillingia scabifera</i>	1	
319	<i>Omalanthus</i> sp.	1	
320	<i>Pierardinia dulcis</i>	1	
321	<i>Hemicyclia sepiaria</i>	2	
322	<i>Briedelia amara</i>	1	
323	" <i>lanceifolia</i>	1	
324	<i>Amanoa attenuata</i>	3	
325	" <i>Berryana</i>	1	
326	<i>Phyllanthus tremulus</i>	7	
327	<i>Emblia officinalis</i>	1	
328	<i>Bischofia Javanica</i>	1	
329	<i>Glochidium lanceifolium</i>	1	
330	<i>Putranjiva Roxburghii</i>	1	
331	<i>Cluytia collina</i>	1	
332	" <i>oblongifolia</i>	1	
333	<i>Antidesma Bunius</i>	1	
	<i>Casuarinaceae.</i>		
334	<i>Casuarina equisetifolia</i>	19	All the oldest trees have been lost.
335	" " (young)	8	
	<i>Coniferae.</i>		
336	<i>Juniperus virginiana</i>	2	
337	<i>Cupressus torulosa</i>	2	
338	" <i>sempervirens</i>	3	
339	<i>Pinus longifolia</i>	6	All the trees have been lost. There are a few plants under five feet left.
340	" <i>khasyana</i>	1	Unique species, lost.
341	<i>Araucaria Bidwillii</i>	1	
342	" <i>Cookii</i>	1	
343	" <i>Cunninghamii</i>	1	
344	" <i>excelsa</i>	4	The largest trees remain.
345	<i>Dammara orientalis</i>	2	One specimen included in 1707. No trees of this species exist here now.
346	<i>Podocarpus Maki</i>	1	
347	" <i>laureifolia</i>	1	
	<i>Cycadaceae.</i>		
348	<i>Cycas officinalis</i>	1	<i>C. Spizleri</i> Roxb.
349	" <i>Rumphii</i>	5	Many specimens remain.
	Carried over	934	

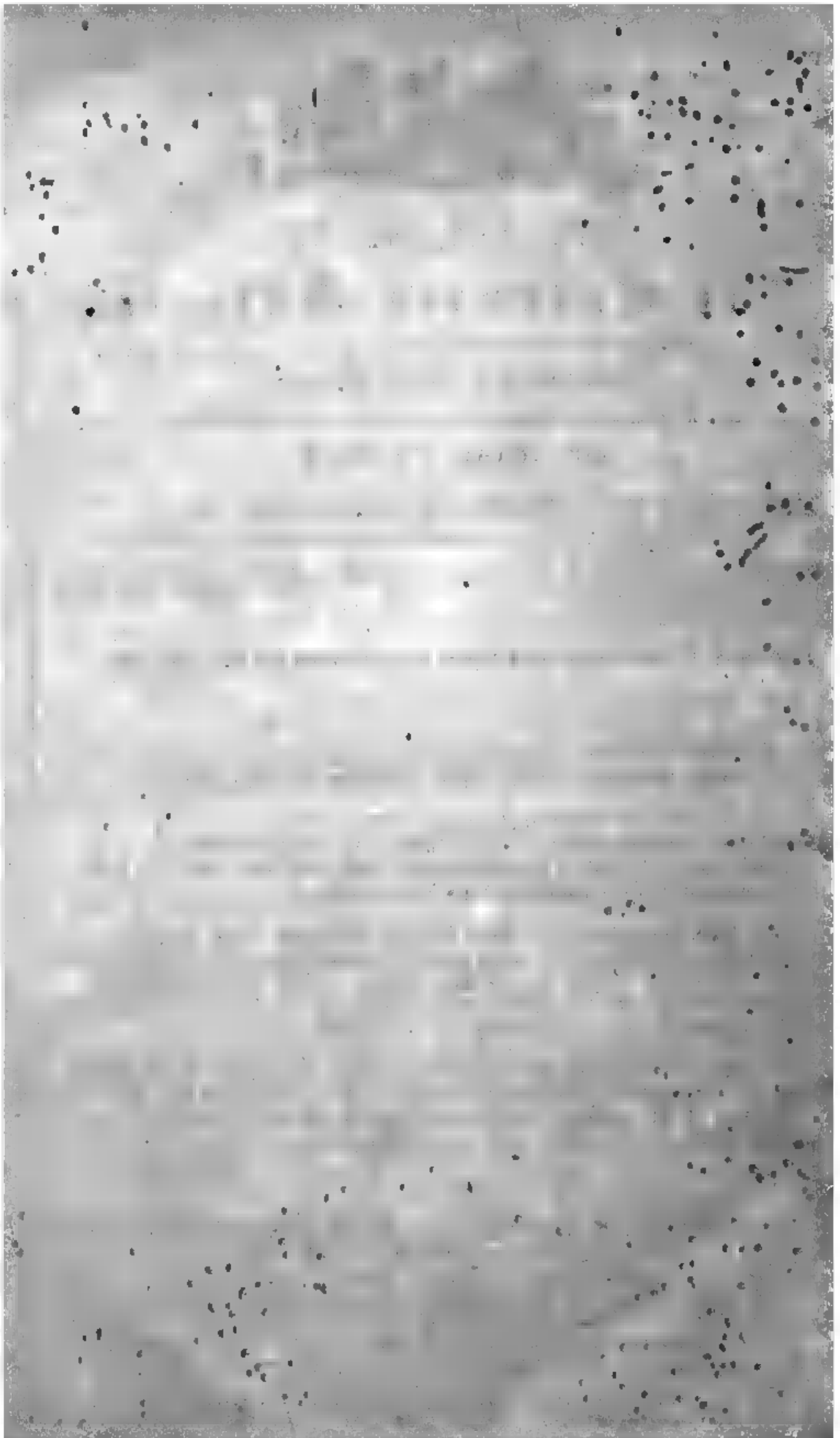


Number of Species.	Name of Species.	Number of Specimens uprooted.	REMARKS.
	Brought forward	934	
	<i>Musaceae.</i>		
350	<i>Ravenala Madagascariensis</i>	1	
	<i>Palmaceae.</i>		
351	<i>Oreodoxa oleracea</i>	2	The original trees introduced by Lord Auckland remain.
352	<i>Arceuthobium</i>	30	
353	<i>Argemone saccharifera</i>	4	
354	<i>Caryota urens</i>	3	
355	" <i>obtusata</i>	4	
356	" <i>sp.</i>	4	
357	<i>Borassus flabelliformis</i>	1	
358	<i>Corypha umbraculifera</i>	1	
359	<i>Livistona sinensis</i>	1	
360	<i>Chamaerops Martiana</i>	1	
361	<i>Phoenix sylvestris</i>	1	
362	<i>Cocos nucifera</i>	8	
	<i>Pandanaceae.</i>		
363	<i>Pandanus odoratissimus</i>	1	
	<i>Gramineae.</i>		
364	<i>Bambusa gigantea</i>	4	One specimen left.
365	" <i>arundinacea</i>	1	
	Grand Total	1,010	

17. Dr. Wallich drew up a very full Report on the effects of the gale of 3rd June 1842. It appears from his Report that that storm did great damage to the garden. Dr. Wallich states that 362 trees were blown down. I observed that in this number he includes shrubs sometimes not more than five feet high, and he points out that of the 362 trees blown down 108 were teak trees, many of which were of large size.

18. This gale of 1842 happened before Mr. Griffith had denuded the garden of most of its fine timber trees. The garden was then thickly covered with trees, and accordingly the number lost in that gale bore a very small proportion to

the vast number left standing. In May 1843, eleven months after the gale, Mr. Griffith, in his Report to Government, says—"At present the garden is literally choked with trees." Had more trees existed in the garden when the Cyclone of last October occurred it is most likely that less damage would have been sustained, as the trees would have sheltered each other. In a garden liable to be devastated at any time by furious storms every arborescent species should be represented by at least five specimens. Unique specimens of many species must always exist, but still the endeavours of the Director should be to procure, if possible, five specimens of each species.





# SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, JUNE 28, 1865.

## OFFICIAL PAPERS.

A SUPPLEMENT to the GAZETTE will henceforward be published, containing such Official Papers and Information as the Government of Bengal may deem to be of interest to the Public, and such as may usefully be made known.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT separately on a payment of six Rupees per annum if delivered in Calcutta, or twelve Rupees if sent by Post.

No Official Orders or Notifications, the publication of which in the GAZETTE is required by Law, or which it has been customary to publish in the GAZETTE, will be included in the SUPPLEMENT. For such Orders and Notifications the body of the GAZETTE must be looked to as heretofore.

### Annual Report on the Hill Tracts of Chittagong for the Year 1864.

From W. GORDON YOUNG, Esq., Commissioner of the Chittagong Division, to the Secretary to the Government of Bengal, — (No. 76, dated the 20th March 1865.)

I HAVE the honor to forward, herewith, the Annual Report for 1864 of the Superintendent of Hill Tracts. It has been drawn up with care, and it gives, I think, a generally correct view of matters connected with that interesting, but comparatively little known country.

2. Such remarks as seem called for from me I have made (for facility of reference) in the form of marginal notes in juxtaposition to the paragraphs of Mr. Kilby's Report to which they relate. I here merely append a Tabular Statement of the Judicial work connected with the Hill Tracts which has been disposed of by myself.

3. As many persons are beginning to take an interest in the Hill District, and to seek for information regarding it, I would suggest that parts, or the whole of Mr. Kilby's Report, might be with advantage published in the Gazette Supplement, either with or without my marginal notes.

From G. C. KILBY, Esq., Officiating Superintendent, Hill Tracts, to the Commissioner of the Chittagong Division, — (No. 5, dated the 8th February, 1865.)

SIR,

I HAVE the honor to submit the Annual Report on the Hill Tracts for the year 1864.

2. During the last year the office of Superintendent was held by Mr. Makgill till 27th September, by Baboo Ootoy Chunder Dass from that date to 3th October, and since then by me.

3. Much that I write in this Report has necessarily been collected from the Office records as it occurred before I took charge, and for the same reason I have not as full information on all points as I might have had.

4. I have, with a few additions and modifications, divided the Report under the same heads as were adopted by Mr. Makgill last year.

*Kookies, and other neighbouring savage tribes.*—These savages are divided into three tribes of

Rutton Pooyea.

Syloo.

Howlong.

Kookies,\* one of Shindoos, and one of Khoomess; among these the Shindoos (living on the Koladyne) are considered the most powerful, but until the present year the Kookies gave us the most trouble, and we have opened communications and carried on negotiations with them

only. In this we seem to have been successful, as during the year under report we have no reason to suppose that the Kookies were engaged in any hostile attack upon our villages, and the two previous years were totally unmarked by any outrage whatever. The only two matters in which the Kookies have this year offended are, that a Chief of the Syloo Tribe robbed some Bengalee wood-cutters, probably because they refused to pay the black-mail which the Kookies had formerly been in the habit of receiving; and that Rutton Pooyea detained two British subjects who had escaped from the Shindoos, telling them they must serve him for one year before he would let them go.† We also, on our part, have, if report is to be believed, offended Rutton Pooyea, Chief of one of the three Kookie Tribes, in taking away some muskets which he brought into Kassalong after an order prohibiting armed Kookies from entering that Bazaar had been passed, and by imprisoning one of his people for stealing a rat-trap.

† The men were taken away by the Shindoos in a raid of which I shall speak hereafter, escaped from them to the Howlong Kookies, who sent them to Rutton Pooyea, from whom they again escaped to our Guard at Kassalong.

is to be believed, offended Rutton Pooyea, Chief of one of the three Kookie Tribes, in taking away some muskets which he brought into Kassalong after an order prohibiting armed Kookies from entering that Bazaar had been passed, and by imprisoning one of his people for stealing a rat-trap.

5. If these peaceful relations be owing to the meetings we have annually been holding with the Kookies, and to the presents they have received from us, we have been less successful with them this year than heretofore. This year the annual meeting was very scantily attended, a few men of the Syloo Tribe, with two Syloo's Karbarees, and Rutton Pooyea's brother, with a few of his people, only having come down to Kassalong, where it was held, while none of Howlong's people and none of the more considerable Chiefs of the Rutton Pooyea and Syloo Tribes came to meet us.

6. I have already reported at length on this subject, and this is not the place to give in detail the reasons to which were due the failure of the meeting; but the chief reasons are, I think, that the Kookies, like all savages, are very indolent and lazy and are tired of coming down year after year to see us, and they seem to have been disappointed in not having received some large sums of money, which were apparently promised them unauthorizedly by our emissaries in former years, and do not now believe they would receive all that is promised them. Howlong and Syloo, too, have never come down; they seem to dread treachery on our part should they render themselves into our power. I am now trying to induce those Chiefs to meet me through Man Raja, one of the Chiefs holding a part of these Tracts under Government, who is reported to have great friendship with Rutton Pooyea and some influence with Dahn Nooya and Vankela, the Chiefs of the other two Kookie tribes.†

\* Syloo.

Howlong.

† Since writing the above my Interpreter, who has returned from a visit to the Kookies, has told me that all the Chiefs have agreed to come in if the Man Raja will go to them, or send his son as a hostage till their safe return. A further report as to the result of the measures now being taken will be submitted.

7. The Shindoos and Khoomess live at a much greater distance from the country inhabited by the subjects of our Government than do the Kookies, and with them we have as yet opened no communication, and I scarcely think it possible for us to reach the Shindoos country except by the Koladyne, near the banks of which river their villages are situated. The above two tribes have been in the habit for many years of descending into that portion of the Hill Tracts south of the Kurudale, which is locally known by the name of the Poang's country, slaying the Poang Rajah's ryots, burning his villages, and taking off all the women and children they can seize. Hitherto they have been left to the protection of the Poang, who received a remission of Rupees 2,600 for such a purpose, but he has repeatedly proved himself unable to cope with his savage neighbours. Last year two distinct raids were made by Shindoos in the Poang's country, each of which was attended with great loss of life to the peaceful Hillmen and to the leading away captive by the savages of many of the subjects of the British Government. Elaborate reports have been written on this subject. I need therefore give only the outlines of each attack.

8. On the 15th and 19th January a band of Shindoos attacked two villages, killed three men, one woman, and a girl, and carried away twenty-three men, women, and children into slavery, where, with the exception of the two men who escaped to the Howlong Kookies, they have remained ever since.

9. Again in the month of April a band of Shindoos attacked a body of twenty-six Bengalee wood-cutters, shot five, and captured nine, one of whom escaped. The savages then attacked a Mugh Village, and out of fifty-six inhabitants killed four, mortally wounded two, and took thirty prisoners. Besides this one child was drowned in attempting to escape from them. None of the captives have returned.

10. Mr. Makgill, with a view of ransoming these persons, wrote to the Deputy Commissioner of Akyab. The matter was referred to the Chief Commissioner, who was in favour of a conference to be held on the Koladyne, but Colonel Phayre prohibited the using of any compulsory measures, and negatived Mr. Makgill's proposition to connect the posts of Akyab with the Hill Tract posts on the ground that it would prove quite useless. As far as my information goes nothing, however, has been done in the matter of ransom up to date.

11. *Police.*—In consequence of these continual raids, and to prevent the annual massacres to which Her Majesty's subjects in the Poang's country have been subject, strong representations were made to Government to sanction a Police Force to assist the Poang in guarding his country, and for this purpose Mr. Currie, Captain Graham, and yourself were appointed to determine what Force of Police was necessary for all the duties that would devolve upon it.

10. You settled that the Force north of

Reserve	40
Kasalong	35
Chobdang	25
Khakbaria	15
Rangamattia	20
Manik Chorea	5
Rangpur	5
2 Posts of twenty men on Rankhump	40
2 ditto ditto on Sankho	40
	80
Total	230

Since writing the above the following posts have been taken up:

Phlooh Kluong, Chemah Kheong, Narej Chorea—all north of the Kurnafonlee.

But as the Frontier is very long, communication very difficult, and as the Joomen build their villages in midst of dense jungle, thus laying themselves open to a surprise, I cannot state with any confidence that we shall be successful.

14. Besides these reasons there is, I consider, a still graver cause for fear. In the margin of paragraph 12 I have shown the sanctioned strength in each post; by this you can see that in only two posts is the number of men in excess of twenty, and there are three of even smaller strength.

15. When it is considered that out of the available Force at each post some men will be required to guard the stockade, and one or two may be ill, I am much afraid that the remainder, enlisted as they are from the timid races of these Hills, mixed with a few Manipoorces and some thengalees, would not dare to venture out of their stockades to attack any marauding body of savages.

16. In your joint Report (paragraph 10) you assume, because the Kookies have not committed

	1861	1862	1863	1864	Proposed strength 1865
Kasalong	250	150	40	30	35
Khakbaria	50	20	0	30	15
Chobdang	0	0	0	20	25
Rangamattia	50	50	20	15	20
Total	350	230	60	95	95
Rangpur	15	12	0	0	5
Manik Chorea	5	5	5	0	5

any raids since the northern posts have been taken up, that the Shindoes will also cease their expeditions when the southern posts are established. Even granting the premises, I cannot come to the same conclusion, for the Shindoes have never been punished or made to feel our power as have the Kookies, nor have we tried to conciliate the Shindoes by yearly presents, and in the above proposition an important point seems to me to have been overlooked which, I consider, affects the whole argument. In the margin I give the approximate numbers of men in each post in the years 1861, 1862, 1863, and 1864 as I have learnt them from Mr. Scott, who was here at the time.

By this you will see that in 1864-65 not much more than a quarter of the men were or are sanctioned for the posts first mentioned than were stationed there in 1861, but there were more than twice as many in 1862, while in 1863 the whole Northern Frontier between Kasalong and Rangpur was left bare of men, so that it can scarcely be said with any justice that the Kookies have not attacked us because we had posts, and, excepting in 1863, our present power to prevent and punish raids cannot be compared with the power we had in the previous years.

17. Since their decrease in strength our posts have never been put to the trial; the Kookies, having been defeated by the larger guards, may dread to encounter the smaller ones, but the Shindoes come fresh into the field without previous defeat to damp them, and I am afraid, if either the Shindoes or Kookies should descend, that they will discover that the posts at their present strength need not prevent them from ravaging the country.

18. For these reasons I have always urged that each Frontier post should be manned by at least thirty-five men.

19. When the new Police was first introduced in the Hill Tracts its Officers seemed to be under the impression that they were bound to act precisely as they would have done in a Bengal Regulation District, and as the method of procedure of the Courts is quite distinct some inconvenience was the result, especially in the Poang's country, as the Poang has been for many years invested with Police powers, and it was considered likely that the two sets of Police would clash. This has been remedied by the interference of the Constabulary having been limited to heinous crimes and grave breaches of the peace.

20. Their principal duty will now be to guard the Frontier, to prevent the passage of arms and ammunition to the Kookies, and to prevent and detect robberies, murders, and armed rias.

21. Mr. Mahab was much opposed to division of the former power of the Superintendent of Hill Tracts by the appointment of a Superintendent of Police, whom he considered to be in a manner independent of his authority; but I am happy to state that, owing to the harmony existing in the official relations between myself and Mr. Scott, I have been sensible of little of this weakening of authority, and, as far as my experience goes, I have had no reason to think that such division has been detrimental to this District.

the Kurnafonlee, including the Reserve for the whole country, should be 150 men; and considered that 80 men should be stationed at four posts in the Poang's country. As it had also been found that Hillmen would not enlist on the former pay of 6 and 7 Rupees, and as none but Hillmen could live in these Hills, the pay was raised to Rupees 8, 9, and 10.

13. As these changes were authorized only in 1865 the full number sanctioned has not yet been enlisted, and the southern posts have not been taken up; but Mr. Scott, the Assistant Superintendent, is using his best endeavors to complete his complement and has gone down to the Poang's country to fix upon the sites where the stockades are to be made. Orders have also been issued to the Poang Raja to equip seventy men to be stationed at three other posts who will be taught the English drill by our Constables. With this Force it is hoped we shall be able to prevent the Shindoes from committing their usual ravages.



22. Mr. Scott has considerable experience of the Hill people, is very anxious to do his duty well, and spares no exertion in travelling about the District, looking to the drill of his men, and seeing that they are effective for active duty. This last is the most important part of the work of a Police Officer in the Hill Tracts.

23. Justice.—I append Statements of the Criminal, Civil, and Revenue cases instituted and disposed of during the past year.

24. I have prepared a simple annual Statement for 1864, shewing the description of Criminal cases tried, and the number of persons convicted, acquitted, and who await trial. As this is the first Statement of the kind submitted hitherto, I am unable to institute any complete comparison between this and the previous years; but Captain Graham, in his Report for 1862, states that one culpable homicide, one attempt to murder, one murder, two dacoities, one highway robbery, one rape, and one suspicion of murder appeared in his Statements. These were, however, explained away: the culpable homicide arose from mortification ensuing on a slight wound given in a quarrel; the attempt at murder was, one Sepoy of the 5th Bengal Military Police Battalion shooting at another and missing him; the murder was an accident out-shooting deer; in one of the dacoities nothing was robbed, and the other was not a dacoity at all; the highway robbery was committed in Chittagong, and there was no proof that Hillmen were concerned in it; the rape case arose from a man eloping with a girl to marry her according to the Hill custom, which is not looked upon by Hillmen as an offence, and the suspicion of murder came from Chittagong; a man it seems had gone into the jungles and was not seen again, but no one was suspected of killing him. And Mr. Makgill reports for 1863 that no crime worse than a case of wounding occurred in that year, so that more crime appears to have been committed by the actual Hill tribes this year than in former years.

25. Doubtless more offences are committed than came before the Courts, for this reason: an increase in the convictions and in the number of heinous cases tried is, I think, a sign of the well working of the Courts and Police; but on the other hand, it is probably better, in petty cases, that the people should adhere to their old customs of arbitration, either by the Village Elders or by their Dewans or Rowajahs, and an increase in petty Criminal cases is therefore to be deprecated.

26. The following cases alone call for a brief notice:—

In the murder case two Moorongs—Tewai and Sewango—came together to a Bengalee Village. Tewai said he had cotton to sell and induced two Mahomedans to take Rupees 140 and go with him to buy it. Sewango had gone before Tewai and the Bengalees were seen going to Tewai's village, and afterwards he was seen with them carrying a dao and musket. As they did not return for some days a relative of the two Bengalees complained at the Thannah. On investigation a woman told the Police that Tewai's wife knew all about the matter, she, when asked, admitted he had confessed to her that he had murdered two Bengalees and he had burnt them; she shewed the Police the ashes of the murdered men; near these was found a key belonging to them which fitted the lock of a box in their house, and a bloody cloth, and hidden under the earth was discovered a bloody dao and Tewai's musket. He afterwards confessed that he had shot both the Bengalees with one bullet for the sake of their money,\* and he also admitted that he had sold cotton to sell. The other defendant, against whom there

\* Before you he said the Bengalees had struck him and he shot them a little after.

was no evidence, and who had been sent up by the Police on suspicion, was discharged and Tewai was committed to your Court, where he was convicted of culpable homicide and sentenced to transportation for life.

27. In the attempt to commit culpable homicide a man and his son-in-law disputed about some cotton. Somebody (unknown) urged the son-in-law to shoot the old fellow, he raised his gun and fired, but the father-in-law got behind some jungle and the shot did not take effect. The man and a Dewan, who was present and said to be abetting, were committed to your Court; the first was sentenced to six months' rigorous imprisonment, the latter was acquitted.

28. The dacoity came before me on 31st December and was remanded for re-investigation. A man and his wife living out in the Joome were bound at night and their houses looted by some seven or eight people, of whom, they say, they recognised three, but little property was taken and the complainants were not injured. Defendants say they are charged maliciously because of a

quarrel about some Joome ground.† The case of illegal assembly has been reported to you before.

It is the one in which Ongya Phroo, a Mugh, came out that he was going to be the new king in place of the Poang Raja and that his dominion would extend all over the Hill Tracts and from Cox's Bazar to the Mugh Bazar in Dacca. Some hundreds of armed villagers collected under this new Chief, but they committed no outrages and rendered themselves to the Assistant Superintendent of Police and a few Constables as soon as they were ordered to do so. The pretender was imprisoned for six months and two other ringleaders for three months each. In connection with this case I was ordered to inquire into and report upon the grievances that the Poang's ryots had against him. I found their only just complaint was that the Poang could not guard them from the Kookies and Shindoos, but this, owing rather to his poverty than to his want of inclination. The new Raja, as he is called, being afraid to lit up under the Poang again, when released from prison came to me and I gave him a site near the Purrah Guard, where he will be safe from the Shindoos and the Poang, and will be a neighbour to the Guard, who would otherwise be twenty miles away from human habitation and would probably feel inclined to desert rather than live in their lonely position. Ongya Phroo failed to pay the Capitation Tax to me instead of to the Poang, and wished, in fact, to be independent of him, but when I have peremptorily forbidden, and when writing to the Poang not to prevent the migration of Ongya Phroo's villages, assured him that all his former rights as landlord over Ongya Phroo and his villagers would remain in force.

29. *Registration.*—In 1863 certain rules for registration very similar to those in force in Southern Pergamona were promulgated for the Hill Tracts. A term of three months was allowed for registration of all deeds, and a double fee was imposed for deeds registered after that term and within six months. As this was a novel rule to a people not much accustomed to pay attention to any law, many deeds were not registered within the time allowed and have thus become invalid and many complaints are made about it. Then the rules include almost every description of deed for the simplest sums; and as, in this large Tract, where communication is very difficult, there are only two Courts, the principal of which alone is much resorted to, people are put to much trouble in having to come to register their deeds and thus commercial operations and time-bargains are greatly hampered.

I am thinking of proposing some modifications, but will discuss them at another time and in another letter. In the margin I have given a statement of the number of deeds registered, fees received, &c.

Number of Deeds presented for registry in 1864.	No. in which registry was granted.	No. in which registry was refused.	Transferred to Civil file.	Pending.	Fees received.	Amount paid to Hukumat Mahant.
					Rs. As. P.	Rs. As. P.
841	169	129	80	13	92 0 0	99 0 0

Name of place.	1862.		1863.		1864.	
	Receipts.	Disbursement.	Receipts.	Disbursement.	Receipts.	Disbursement.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
Kornafollee	10,353 4 9	726 15 4	12,169 3 0	881 5 7	10,147 8 8	500 8 2
Sunkoo	Accounts of receipts and disbursement for December 1861 have not yet been received.				558 10 6	205 0 0
Matamohoree					991 7 11	140 13 1
Baghalliee					614 4 8	207 5 5
Total	10,353 4 9	726 15 4	12,169 3 0	881 5 7	12,339 12 11	1,204 15 10

\*The extension now is the Waste Land of which much has been sold, as I shall proceed to show.

to the Kalindoo Range at an annual rental of Rupees 7,568, and I shall propose the letting of the other rivers to the Pong, but an Annual Report is not the place to treat of such matters.

32. *Capitation Tax.*—This Tax is a rude substitute for rent for the use of soil. It differs from rent in so much that the amount of the Tax is not proportioned to the amount of land cultivated, nor even to the number of cultivators, but is an unvarying sum levied upon each household, no matter whether few or many.

33. Different rates are taken by the different farmers, but all on the same principle and under the same rules, one of which is that no widow or widower, no unmarried man or maiden is charged any thing though they may, by inheritance or industry, be the richest persons in their villages and may cultivate the most land; but as rich men are never content till they have married, and women stay unmarried no longer than they can help, and the children leave their father's houses, marry and make new households, the families are generally pretty much of the same number and strength and little substantial injustice is done.

34. Another very curious rule is also in force and very cheerfully obeyed, that is, as the tax is not leviable on the land the people themselves are considered the firm. Thus if one of the Chiefs sells a Talook, he does not sell the right of levying the tax over any specified tract, but mentions the names of the Joomas from whom and whose children the tax is to be taken, these men then consider themselves the Talook of the purchaser. Occasionally when a Talookholder makes himself unpopular, they abscond and go to another man and will then swear they are his property. Even parts of a Jooma household are sometimes sold, or they occasionally become the joint property of several men, but no sense of shame seems to attach to their condition in either case; nor,

since the establishment of the Hill Superintendency, has there scarcely been a case, I believe, in which a Jooma has tried to escape payment of his tax to an unpopular Talookholder on the ground that he had left his part of the country and settled in another Chief's land, but the invariable defence is that they belong to another and never did belong to the unpopular man. This matter has had the closest attention of my predecessor, who wrote a long report on it, and I also have given much thought to the subject.

35. Although at the first view the Capitation Tax seems a very unjust and degrading form of rental, yet there are many difficulties in introducing a better system, and in no other way could the tax be gathered so cheaply; and besides as the people (as also the Tipperah Rajas) are so used to it and have been accustomed for many generations to this form of tax, there are no very urgent reasons for substituting a different system, as there would be were the present tax unpopular. But undoubtedly some changes are required, and the rights of the Chiefs, which are at present very undefined, require to be fixed on a clear and intelligible basis. The subject is a long and intricate one and would take up too much time and space in an Annual Report; I will therefore let it lie over for a time until I can write a separate report on it.

36. I cannot give any returns of the amount paid by the different farmers, as among the other difficulties the management and assessment of the tax is quite out of the province of the Superintendent. This is paid to the Collector of Chittagong, who having no other concern with, or knowledge of,

	Rs. As. P.
Collector	1 2 3
Mán Raja	Rupees 3, 5 and 7
Poang	8
Kalindoo Ranees	3, 4 and 5
Average of the different rates of the three Chiefs, Rs. 5 per house.	

the Hill population, and no means of inquiry into the correctness or otherwise of the numbers returned, leaves the settlement of this tax with the Chiefs and people. As might be concluded, the ratio hereafter is about one-fourth the sum received by the Chiefs, to whom long leases have been given, and complaints have been made to me by the Poang and the Mán Raja that their ryots, in order to pay the lighter tax, now swear themselves to be nomadees or late immigrants and get agreements from the Collector direct instead of from their own Chiefs.

37. **Education.**—In June 1863 a School for educating Hill children was started at Chundergonia,

	Rs. As. P.
Grant for 1864	1,482 0 0
Amount expended	1,309 14 1
Average daily attendance of boarders	20†
Average daily attendance of day scholars	10†
Cost per head of boarders	— 80
	274 4 0

† This is not quite correct, the average is 21 or a little more for the boarders, and some fraction for day scholars. The day scholars obtain tuition gratis, but they are not reckoned in calculating cost.

‡ Some of the boarders sit at their own expense, they have been excluded from the average although they are supplied with books, &c., otherwise the average would average about Rupees 68 per head.

the heir of the Kalindoo Ranees, a very old woman, and the richest of the Chiefs to whom the Capitation Tax has been farmed. The Mán Raja has also been very desirous to have a School in his village and offered to subscribe Rupees 10 a month towards it, but as the continued existence of the Chundergonia School is doubtful, and funds must have been supplied from its surplus, I have not opened the other. I shall report on this matter in my letter about the Chundergonia School.

38. **Waste Land.**—In the margin is a Statement of the lands sold during the last year, their price,

Number of Lots sold.	Area in Acres.	Price per Acre.	Amount realized in 1864.	Amount remaining to be realized.	Total sum received and payable for lots sold.
		Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
25	70,154 (17 poles)	3 5 0	1,238 3 0	1,90,088 14 9	2,00,377 2 3

Number of Lots applied for that have been authorized for sale.	Area in Acres.	Probable sum to be realized by sale.
		Rs. As. P.
25	70,154	57,730 0 0

sanctioned by you under the belief that natural boundaries could be taken from the Topographical Survey Maps and a sufficiently approximate calculation of area made from them. Had bullahs or particular hills been fixed on as boundaries little or no difficulty would have been experienced, but the boundary in many lots was identical with that between the Hill Tracts and Zillah Chittagong. This boundary is a most intricate one, and in most places lies to the east of the surveyed areas of the frontier villages in Zillah Chittagong. It is impossible, without having the map, to discover what lands have been surveyed. The Ameens were not at first supplied with maps, and hearing that Mr. O'Donnell had, in his survey of the Hill Tracts, "drawn his claim" for his "own lines" through fields in the plains, they, in some instances, laid down the boundary of the Waste Land lots on this line as far as they could discover it, thus including permanently-settled land within the boundaries of the Waste Land lots.

40. This error is not of much consequence, but will entail the re-survey of all such boundaries as have been found not to tally with the survey maps.

41. For some months it was expected that professional Surveyors from Mr. O'Donnell's survey would be ordered to survey these lands, and only in December were orders received from the Government of Bengal, to the effect that the Ameens' survey, when tested by the Superintendent and by comparison with the Topographical survey maps would be considered sufficient.

42. As I had not sufficient leisure from other important duties to be able to undertake the whole work myself, I applied for assistance, and Mr. Davey, a Deputy Collector, who was formerly a professional Surveyor, was deputed for the purpose of assisting me in testing the Ameens' survey. He is now engaged in this duty.

43. Most of the surveys were made during the rains by Ameens insufficiently qualified for their work, and they have put down slight stakes not properly staked down to mark their stations. Now, owing to the above reasons, and the time that has elapsed between the first survey and the testing, these stakes are not to be found and much difficulty is experienced by Mr. Davey in testing.

44. I have reason to hope this difficulty will not occur in some of the lots last surveyed, or when the testing of all the present lots is finished that we shall again be embarrassed by similar

of the lots sold and applied for all but three were surveyed last year by Ameens. These three have since been surveyed.

39. At first much difficulty was experienced in obtaining Ameens, and as the rush for lots was chiefly in the rains and the Planters were very urgent for receiving immediate possession, prior survey and demarcation was dispensed with. This departure from rule was

46. Until the present year the Government expenditure in these Tracts

has been greatly in excess of receipts, but this year the money to be received from Waste Lands will govern four years of the present expenditure.

EXPENDITURE	1895.	1896.	1897.	1898.	1899.	REMARKS.
Rupces.	Rupces.	Rupces.	Rupces.	Rupces.	Rupces.	
Korkin Expedition	100,000					
Cost of Military Police		50,000	30,000	20,000		
Cost of Civil Constabulary				1,000	20,718	
Superintendent's pay	200	13,400	8,400	7,000	7,000	
Transport allowance	412	1,332	1,651	780	835	
Office Establishment	100	1,251	2,220	1,374	1,781	
Other items	407	3,000	2,672	2,681	3,314	
Total	1,00,409	51,576	44,163	31,925	43,999	
Receipts						
Capital Tax	1,000	9,000	9,000	9,000	8,000	
Tolls			9,000	11,512	12,134	
Waste Lands			840	247	2,00,377	
Other items		115			320	
Total	9,000	9,115	19,175	20,864	2,21,831	
Balance of Loss	90,409	42,461	24,988	11,061	17,168	
Div. of profit						

\* The shape of the country north of the Kormakolee is at present with the Survey Deputy Collector and I am unable to give the exact area, but if I remember right this is about correct. The area of the country south of the Kormakolee is 2,350,411 acres, or 3,323 square miles.

probably within this generation of the lands being all sold, or, if labour is obtainable and coffee and tea planting remain nearly as profitable commercial speculations as they have hitherto proved, of this source of revenue failing for many years to come.

47. On the eastern side of the Tract there are also high ranges of hills rising from 2 to 5,000 feet above the sea level, where there is a very heavy rain-fall, and which, I should think, would be admirably adapted for the growth of the Cinchona tree. As tea and coffee plantations extend, the savage tribes on the eastern frontier will either be thrown further back or coerced or induced to live in a more peaceable way, in which case these Hills might be taken up for Cinchona plantations.

48. I should imagine that the climate and soil are both much like those of Burmah, and I confidently believe that teak and other Burmese timber trees would grow here to perfection. But as the pernicious mode of Joom cultivation has been practised without restriction in these Hills from time immemorial, and the people of Chittagong and Sundeeep have been for generations in the habit of cutting and transporting all good timber trees, there is scarcely any thing worthy the name of forest left within easy reach of water carriage in the Hill Tracts.

With a little care and some expense for planting and conserving, I have no doubt that fine forests of good timber could be grown; these in the end would, I should think, return cent per cent the expense of planting and looking after them.

49. I have hitherto had no leisure to commence any experiments, nor am I, from reading or personal experience, in the condition to give any authoritative opinion on the best way to develop the agricultural and other resources of the Hill Tracts, but I intend to study the subject and hope during this year (1895) to lay some plans before you for your consideration.

50. It has come to my knowledge that many persons have obtained "pottaks" (leases) from the Chittagong Collectorate for grass lands, wherein boundaries are given embracing large areas, but in which some very small area is mentioned. For instance, a piece of land may be rented with four streams for boundaries in which there are contained one thousand or more kanies, whereas in the body of the lease they are stated to contain only ten kanies. As these lands are very profitable and require little or no labour they are now let often for 50 or 100 times the rent paid to Government. The balance of gain has been obtained by fraud and misrepresentation and belongs of right to Government. I intend investigating these leases with a view to restore to Government that which rightfully belongs to it. This is difficult to do and requires time, for the holders of these leases are very clever in producing them, and in suits between different claimants possession is there generally insisted on throughout. I will report any steps that I may take in this matter hereafter.

51. Within these Hills there are some valleys and plains of large extent and so low and moist that paddy and other grains could be cultivated to great advantage in them; but as jungle-clearing is costly, labour nearly unobtainable, and as Bengalee ryots are averse to living in the Hills, these lands are likely to remain uncultivated for some years to come. But if any adventurous capitalist like Messrs. Morrell in the Sunderbans were to devote himself to cultivating these lands great profit to himself, and great gain to the country, would result. In future years doubtless these lands will be taken up and cultivated.

62. The population of these Hills is estimated to be about 60,000, but I consider the land could

support ten times this number, and there is no calculating the improvement and progress possible in these Hills when capital and labour shall have been attracted to them. That this improvement has begun is proved by the sales of land during the last year.

\* Technical term for each series of green leaflets such as are used for manufacturing tea. In Assam there are twelve or thirteen series in the year. In these Hills some of the Planters say there will not be more than six or seven, while others say there will be more than in Assam.

of the Planters say there is too much seed in the soil and although excellent tea will grow they will not obtain a sufficient number of bushes\* to pay for the cost of importing seedlings. Whether this last fear is well grounded or not time and experience will show, but the further I have gone into the interior the better the land seems to

me to be, and perhaps this better quality of land might counter-balance, in some degree, the greater cost of imported over local labour.

promise of the crops was at first very good, but, like last year, hordes of rats ravaged the fields and destroyed in many places, a full half or two-thirds of the produce, consequently grain is scarce and dear, and as the Joomas are a very improvident race and borrow money at most usurious rates they are likely to suffer for some years from the scarcity now prevailing. But they will not suffer so much as they would have done some years ago, as the price of cotton is so high that even a small amount of it will buy them food till another season.

54. The constant dread of Kookies operates also to decrease the agricultural outturn of the District, as rumours of Shindoos and Kookies being out on the war-path are continually being circulated, and the villagers, as soon as they hear this, leave their fields and homesteads and crowd on the banks of the Kurnasoolas for safety.

55. I hope that the new posts will give more confidence, and as they are situated in fine farming lands, many hundreds of Joomas might settle with both profit and safety around them.

56. *Public Works.*—The Public Works year ends on 31st April, it will be more convenient then to report upon what has been done than to do so now, otherwise parts of two years would come under review and it would be necessary to mention the grants for twenty-four months while the work would have been only for twelve months.

57. I may, however, mention that the road to connect the posts of Kassalong, Khakhuria, and Gelabaree is being made under the superintendence of an Assistant Engineer, and, it is hoped, may be completed this year, and that a hill path from Kunchun Nagar to Manick Cherra and Gelabaree and from thence to Rangbur was also cleared by the Mán Raja at an expense of Rupees 1,000 during the year under review.

58. This last road was about sixty miles long, so the cost per mile averaged only a little more than Rupees 30. For such a sum, it will be evident, nothing but mere jungle-clearing could be attempted, and I have since heard that a great part of it has become again choked up with thatching grass. Provision was not made for keeping the road clear, and as it was completed just before the rains, and jungle grows up with wonderful rapidity in this country at that season, and the road was taken for the most part through grass kholas, it is not to be wondered at that such should have been the result.

59. I intend, as soon as the Superintendency Elephants are returned from the Boutan war, to visit that part of the country and will lay some suggestions before you as to how the road may be kept clear. I dare say the Mán Rajah would take a contract for such a purpose at a low rate.

60. Paths made by natives for their own convenience are cleared twice a year, and if we are to obtain any value for the money spent on the various roads, it will either be necessary to contract with the Hill Chiefs or others to keep them clear after they have been completed, or to pay a gang of Coolies to continually traverse and clear the roads. The Police Force is far too weak to be able, unaided, to perform any such duty satisfactorily.

61. *General Health.*—The health of the people last year was good. In 1862 a great epidemic of small-pox broke out, and before that cholera raged, but for the last few years the country has been free from epidemics.

62. This is to be ascribed to the paucity of the population, and the large area they are scattered over rather than to any precautions taken by them. The people in the Hills are not accustomed, as are the Chittagong people, to inoculation, and hitherto every attempt at vaccination has completely failed. This is greatly to be regretted, as here there are no cast prejudices to overcome, and there would be no great difficulty in causing every man, woman, and child in the Hill Tracts to be vaccinated if success in the cases could only be obtained.

\* Since the date of this report there have been three successful series of vaccination and the lymph thus obtained is being employed for the vaccination of others.

W. L. Y.  
Commissioner.



62. *Office Work and Routine.*—When Captain Magrath was first appointed he had no Writers and kept no records; afterwards slowly the Office Establishment was increased to the present number. At first there was necessarily no attempt at routine, and up to the present time the business has not settled down to the amount of business with which it proceeds in Offices of larger standing. Only a short time before I assumed charge the Office Establishment was increased.

63. When I came the records both in the English and Bengalee Departments were in the greatest confusion, and reference to previous correspondence and work was very difficult. Nor had the system been introduced which obtains in Regulation District Offices of portioning out the work to the different ministerial officers and making each responsible for the due performance of his own duty; as a consequence it was impossible to fix blame upon any particular person when anything went wrong and each officer shirked the work and left it to be done by others.

64. The strength of the Establishment is now quite sufficient for the work devolving upon it and I have portioned out the work and given each officer to understand that no excuse will be taken for anything in his Department is faulty.

65. The ministerial officers as a body are not deficient in ability, and I hope now that all business will be transacted with that punctuality and care that is usual in Regulation Districts, and you will have less cause to complain about statements sent in late and wrong than you have had since I became Chief, and that you will not have reason to send so many reminders of work left undone and letters unanswered as you have had.

66. Bahadur Bhugwan Chunder Bosa was for a few days the Assistant to the Superintendent, but I saw nothing of his work and can give no opinion on it. Since then Mr. Kelly, the Joint Magistrate, and Bahadur Chunder Roy had charge and transacted in Chittagong the little business connected with the Assistantship. The work of neither has come before me, I am therefore not in a position to report on it.

67. *Change in the Law.*—Some time before I took charge a ruling of the Advocate-General was received laying down that all Laws (in which no special limit of local application is made) passed since Act XXII. of 1860\* would apply to the Hill Tracts.

\* An Act to remove the Hill Tracts east of Chittagong from the jurisdiction of the tribunals established under the general Regulations and Acts.

68. In reference to the above ruling you called upon Mr. Makgill† to give his opinion "on the whole question" in order "that an early report might be submitted to Government on the modifications which may be thus rendered necessary in the Rules of practice at present in force in the Hill Tracts."

† Letter No. 189, dated 16th July 1884.

69. In his reply‡ the matter is just touched on, the greater part of the letter being taken up by the reasons for increasing the Office Establishment: he only writes, paragraph 4;—"There does not appear to be any peculiar reason for exempting the Hill Tracts from the action of the Stamp Law, and I do not at present perceive that any very important effect is likely to be felt from its recognition," and does not give his opinion on the advisability, or otherwise of having the other Laws introduced, or suggest any course for adoption with respect to the above ruling.

‡ No. 189, dated 23d August 1884.

70. There are no copies of Acts and Regulations in this Office, but I have sent for them; when they arrive and I have looked over each Law, I will, if I find it necessary, report upon any that I think should not be introduced.

71. Although in the letter above quoted Mr. Makgill gave no decided opinion, I gather from his remarks in the last Annual Report that he was strongly against assimilating the system of Government of this country to that of a Regulation District.

"I want to state it as my opinion that the assimilation of the system of Government of this country to that of a Regulation District is most undesirable. The condition of the two countries is totally different. Besides the important differences of race and character, it should be remembered that the people of these Tracts are a feudal race, having no tie to any particular spot of soil and owe a sort of feudal allegiance to their Chiefs. It may be conceived how difficult it is to apply to a people so constituted the Provisional Rules of the Annual Regulations, and whether such rules should be allowed to the Chief in charge of these Tracts in passing executive orders he should have the fullest means of doing so, and he alone should be responsible for the well-being of the people."

§ I do not think that the ruling will have the effect apprehended. It applies only to Laws of general application, and not to the Codes of Procedure and other Laws which the Legislature has (properly) considered to be inapplicable to Non-Regulation Districts.

W. G. Y.,  
Commissioner.

evidently, he to produce the assimilation which Mr. Makgill deprecates.

the margin, I give his remarks, in which I entirely concur; and I greatly regret the ruling, as its effect will

Yearly Return of Crimes in the Hill Tracts Superintendency for the Year 1884, Chanderpore, dated March 1885.

DESCRIPTION OF CRIMES AND NUMBER OF SECTIONS.		CASES BROUGHT UNDER TRIAL AND PERSONS ARRESTED.												Number of Cases reported or otherwise believed to have occurred during the year.	CASES BROUGHT UNDER TRIAL AND PERSONS ARRESTED.												Number of Persons convicted.	Number of Persons committed.	Persons acquitted or otherwise released.	Died, escaped, or transferred.	Remaining under trial.		REMARKS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Signed) G. O. KILBY  
Officiating Superintendent, Hill Tracts.

*Yearly Statement of Civil and other Cases for the Chittagong Hill Tracts for the Year 1884.*

DESCRIPTION OF CASES.	Pending from last year	Entered during the year.	Total	Decreed.	Dismissed.	Struck off.	Refused.	Compromised.	Transferred.	Notified.	Pending at the close of the year.	REMARKS.
Civil	7	280	287	288	13	46	0	1	0	0	0	
Revenue	3	50	53	33	8	10	0	0	0	1	1	
Execution of decrees	10	54	64	0	0	56	0	0	0	0	0	
Miscellaneous	4	13	17	0	0	16	0	0	2	0	0	
Registration	7	0	7	0	0	7	0	0	0	0	0	
Objection against sale of Waste lands	0	341	341	169	5	83	32	0	69*	2	13	* These were for registration and decrees together and were transferred to the Civil file.
Total	31	618	649	435	26	218	32	1	72	3	25	

(Sd.) G. C. KILBY,

*Officiating Superintendent, Hill Tracts.*

*Statement of Judicial Work relating to the Hill Tracts of Chittagong disposed of by the Commr. during the Year 1884.*

DESCRIPTION OF CASES.	Number of Cases appealed against the decision of the Superintendent, Hill Tracts.	Number of Cases upheld.	Number of Cases reversed.	Number of Cases modified.	Number of Cases struck off.
Civil	23	20	7	...	1
Revenue	28	20	1	...	7
Criminal	10	8	2	...	...
Miscellaneous	6	...	...	...	6

DESCRIPTION OF CASES.	Number of Cases committed by the Superintendent.	Persons.	Convicted.	Acquitted.
Commitment in Criminal cases		7	2	5

W. G. YOUNG,

*Commissioner.*

COMMISSIONER'S OFFICE;  
CHITTAGONG,  
The 27th March 1885.

Resolution by the Lieutenant-Governor of Bengal,--(dated the 8th July 1865.)

Read a letter from the Commissioner of Chittagong, No. 76, dated the 26th March last, giving cover to the Annual Report of the Superintendent of the Hill Tracts of Chittagong for the year 1864.

1. The Lieutenant-Governor observes that the matter discussed in paragraphs 1 to 10 of the Report have formed the subject of a separate correspondence and the Superintendent's remarks do not therefore require notice here.

2. The question of Police Posts treated in paragraphs 11 to 22 has also been separately disposed of. The Lieutenant-Governor notices with pleasure the very favorable mention made in paragraph 22 of Mr. P. G. Scott, Assistant Superintendent of Police.

3. Paragraphs 23 to 28, and the Statements appended relating to the administration of Civil and Criminal justice, do not call for any special remarks. The result of commitments in Criminal cases is not very favorable.

4. PARAGRAPHS 29 AND 30.—The Lieutenant-Governor awaits the Report promised in paragraph 30 of the alterations which the Superintendent proposes to make in the system of Registration. The large proportion of cases in which registry was refused during the year is somewhat remarkable and should have been explained.

5. In the Statement given on the margin of paragraph 31 of tolls levied on the natural products of the Hills during the year 1864 the Lieutenant-Governor notices a great difference in the ratios of receipts to cost of collection. On the Matamohore Rupees 984 were collected at a cost of Rupees 140; while it cost Rupees 298 to gather in tolls to the amount of Rupees 589 on the River Sunko. This requires explanation.

6. Paragraphs 32 to 36 relate to the Capitation Tax. This tax, though a rude substitute for rent for the use of the soil, is, in the Lieutenant-Governor's opinion, by no means an unjust and degrading form of rental; nor is it an unpopular tax among the Hill people. The remarks in paragraph 36, however, indicate the necessity for an immediate change in one respect, and the Lieutenant-Governor does not understand why it has not already been carried out. Article XI. of the Rules laid down for the guidance of the Superintendent of the Hill Tracts when that office was first created expressly declares that it will be the duty of that Officer to collect the revenue of the Hills. This Rule should now at once be put in force.

7. PARAGRAPH 37.—*Education*.—On this subject the Lieutenant-Governor awaits the special Report promised by the Superintendent.

8. PARAGRAPHS 38-52.—*Waste Lands*.—The errors in surveying are much to be regretted. The Aumeens employed should have been supplied from the first with the Survey Maps of the permanently-settled Territory and of the Hills.

9. With reference to paragraph 48 the Commissioner should report whether he would advise the introduction into the Hill Tracts of the provisions of Act VII. of 1865, (for the protection of Forests,) and the Conservator of Forests should submit a Report on the timber in the Forests of Chittagong.

10. The irregularities noticed in paragraph 50 will be checked when the revenue of the Hill Tracts is placed under the Superintendent.

11. Paragraphs 53 to 72 do not call for any remarks.

12. The acknowledgments of Government are due to Mr. Kilby for his intelligent and interesting Report.

From J. GREGG, Esq., Under-Secretary to the Government of Bengal, to Dr. T. ANDERSON, Conservator of Forests L. P.,--(No. 3684, dated the 8th June 1865.)

I am directed to forward to you the accompanying extract (paragraph 49) from the Annual Report on the Hill Tracts of Chittagong for the year 1864, and to request that you will have the goodness to submit a report on the timber trees which grow or can be grown in those tracts.

## Report on the progress of Tea Cultivation in the Assam Division

From Lieutenant Colonel H. HOPKINSON, Agent to the Governor General and Commissioner of Assam, to the Secretary to the Government of Bengal, (No. 126), dated Coochabaty, the 20th April 1865.)

I have the honor to submit the following report on the progress of Tea cultivation in this Division during the past year:—

NAME OF DISTRICT.	Number of Estates in the Division.	Number of Gardens in each Estate.	By registered and other titles.	EXTENT OF LAND UNDER CULTIVATION.					Extent of land under cultivation at the close of 1864.	Extent of land under cultivation in 1865 (number of gardens).	Total area now under cultivation.	Outturn of Tea in the Division.	Outturn of Tea in the Division (number of gardens).	Increase or Decrease.	Estimated outturn for the season 1865.	AVERAGE NUMBER OF LABOURERS EMPLOYED DURING THE YEAR.				
				In new fields.	In cultivation before 1864.	In cultivation before 1864.	Total.	In cultivation before 1864.								Men.	Women.	Children.	Total.	Men.
Dumkimpore	62	176	41,912	61,123	10,210	10,210	7,574	3,638	11,752	5,041,512	1,548,985	19,208,857	1,181,670	1,722	1,029	1,029	1,029	1,029	1,029	
Sibsagar	114	821	1,30,551	97,740	32,711	32,711	11,620	2,002	18,471	12,01,918	1,74,815	2,79,679	1,130,354	1,945,251	13,132	1,945	1,945	1,945	1,945	
Nagaong	20	91	41,872	12,941	28,931	28,931	4,023	1,657	3,794	1,74,315	1,84,256	1,72,700	1,053,144	1,077	1,677	1,677	1,677	1,677	1,677	
Dibring	44	11	7,945	44,100	12,673	12,673	1,729	3,019	1,734	21,070	36,809	1,72,700	2,254,271	2,656	2,656	2,656	2,656	2,656	2,656	
Kamroop	49	43	30,968	6,928	24,040	24,040	1,553	1,120	2,703	45,980	10,635	1,04,758	1,999,174	2,211	2,211	2,211	2,211	2,211	2,211	
Gowalparah	12	12	1,61,108	2,09,295	43,187	43,187	1,169	115	291	550	901	3,620	201,15	1	277	277	277	277	277	
Total	267	492	2,61,108	2,09,295	55,167	55,167	80,740	14,395	43,567	21,74,145	2,105,991	32,30,761	1,776,418	21,606,280	1,732	24,331	24,331	24,331	24,331	

7. It is most desirable that Annual Reports on the progress of Tea cultivation in Assam should not be discontinued at least until the proportion which the trade in tea renders it unnecessary to watch its further development. Meanwhile I think it important that the Reports which are submitted should be as accurate as they can be made. I purpose, therefore, to call on Deputy Commissioners, after consultation with some of the influential Planters of their Districts, to prepare and submit, for my consideration and eventual reference to Government, a well devised scheme by which the desired object can be obtained.

2. I have condensed in the Tabular Statement on the margin the information obtained from the Returns of District Officers in regard—(1st,) to the number of Tea Gardens now in Assam; (2nd,) the amount of local and imported labour employed on them; (3rd,) the extent of waste land taken up for Tea cultivation; (4th,) the tenures under which it is held; (5th,) the area cleared and planted to the close of the year of report; (6th,) the outturn for 1863 and last year; and the expected outturn for season 1865.

3. Official records have supplied the details of waste land taken up for Tea; but in regard to the outturn and extent of cultivation of each District, Deputy Commissioners have had to rely chiefly on information obtained from the Planters themselves.

4. Where for comparison the outturn and cultivation of 1863 are shown in the Statement now submitted, it will be observed that, with the exception of Luckimpore, the figures for the other Districts do not agree with those exhibited in my Annual Report for that year. It is not easy to explain the cause of this, in most instances I believe it to be owing to Planters being able to furnish more complete information now than what they were able to give when the Statements for 1863 were being prepared. In some few cases discrepancies may, I think, be attributed to changes in the management of factories, for, except in rare cases, Planters do not retain copies of the forms they fill in each year. They have, therefore, to trust a good deal to memory when they are asked to give particulars of their operations for former years.

5. Nearly all the Deputy Commissioners of this Division notice the difficulty which they experience in collecting the necessary information required to be embodied in their Annual Tea Reports—a difficulty which, they unanimously agree in saying, keeps increasing each year with the extension of Tea planting.

6. A suggestion which I made to District Officers about the close of last year to endeavor to form a Committee of Planters to aid them in procuring reliable information on the points most acquired has, I regret to say, been found on trial to be not generally practicable. Captain Seance, the Deputy Commissioner of Sibsagar, stated that, on mentioning the subject to some of the Planters of his District, "objections were raised on the ground that gentlemen who are willing to furnish the Deputy Commissioner with official informations as to their own estates are reticent with regard to each other." The other Deputy Commissioners reported on the subject much to the same effect as Captain Seance.



Following the classification of former years, I proceed first to notice the progress of Tea operations in the District of Luckimpore:—

9. LUCKIMPORE.—There were about 4,000 acres of waste land brought under cultivation during the year, making the total extent of land planted with Tea in this District close on 12,000 acres. The Deputy Commissioner, Captain Comber, states that planting is now on such a large scale that the local labour available is found altogether insufficient to cultivate and work the gardens already in existence, and that, during his cold weather tour in the District, he saw fine old gardens from which no Tea had been made from want of hands to pluck the leaves; this may probably account for the falling off of nigh 10,000 lbs. of Tea observable by the Returns, but Captain Comber accounts for it as follows:—

"I account for this by the fact that in the previous year the plants had been over-plucked, and that in consequence it was necessary to nurse them this season, in addition to which the fall of rain this year fell short of what is usual and the yield of leaf was consequently less; on the other hand there were gardens which this year attained the age at which they are usually plucked. I may here remark, however, that the data on which these statistics are based, though certainly exhibiting a fair approximation, cannot be considered altogether reliable. I have been for the last two and a half months endeavoring to obtain correct information from the Planters, and although none offer any objection to afford it, they still put off or neglect to fill in the Returns, and I have been obliged in some instances, to supply the omissions from my own personal knowledge of the gardens and the labour and means of the parties working them. The working of the older and more extensive estates, however, I believe to be correctly stated."

10. In connexion with the fall in the price of Tea seed, Captain Comber makes the following remarks to shew that the extension of Tea planting has not thereby been in any way discouraged:—

"The value of Tea seed has fallen considerably since my last Report was submitted. The best seed which last year fetched Rupees 200 the mound can scarcely find purchasers this year, and yet there is no indication of Tea-planting becoming an unpopular occupation; on the contrary, both the number of the European Assistants have increased and their salaries have also risen. The great Companies now find that they can afford to send out educated young men from England on salaries sufficient to make them look to Assam as the spot in which their independence, if not their fortune, is to be achieved. I believe within the last two months two more large Companies have been formed in London, and a staff of young Assistants are on their way out from England to learn the business of Tea-planting and Tea-making."

11. SEPSAGUR.—In the Sepsagur District there are now 14,221 acres of land cultivated with Tea, of this 3,092 acres were planted out during the year of report. The Deputy Commissioner believes that further extensions were arrested only from insufficient labour. The

output of manufactured Tea was 17,18,225 lbs., shewing an increase of 1,00,000 lbs. over the output of the previous year.

12. In noticing the operation of the Waste Land Rules in his District and their bearing on Tea planting, Lieutenant Sconce remarks as follows:—

"The Waste Land Rules have on the whole disappointed European Planters. There has been

\* Note.—There have been a great number of speculating Europeans. It was the keen competition among the Europeans that gave the hint to the Natives to bid up for the land in order to sell again to the Europeans.

a great deal of competition introduced in the land sales by speculating Natives,\* who have caused the price to rise enormously, and in many

instances the real value of the land has been so much exceeded that the purchasers have been unable to part with their lots. For the moment, Government may have appeared to have profited, but it remains to be seen whether or not bidders can pay the exorbitant prices within the prescribed period. These speculators can have done little to advance the country. Few of them are capitalists, and none mean to import labour or spend much money in opening out the jungle. Those who have overbid the real value of the land and are unable to sell again are simply obstructing others who would be willing and able to extend Tea planting. Real Tea Planters are regretting the abolition of the old Rules of 1854, which had advantages not existing in the new Rules.

"That the Rule requiring survey before sale was ever suspended cannot be more regretted than it is by Officers whose duty it is to administer the new Rules. To do justice to opposing claimants and to guard the interests of Government without the guide of a preliminary survey is absolutely impossible, it is merely working in the dark and the result is unsatisfactory to every body. The present system allows unprincipled grasping persons to extend their limits beyond their right, (for it matters little how vigilant fiscal Officers are when boundaries are unknown,) old established rights are jeopardized, entire lots or portions of lots may be put up to sale more than once, and consequently litigation is promoted, whilst the total absence of survey prevents the truth from being discovered. The original clamour which called forth these Rules has now passed by, the European Planters have had a taste of what they wanted, and there is a feeling of disappointment arising, I believe, from the fee-simple not being obtainable without a sale by auction. The dissatisfaction with these Rules is made manifest by the eagerness with which the common tenure of the country is now accepted."

13. NOWGONG.—In Nowgong Tea planting appears to have progressed favourably during the year; 1,687 acres of waste lands were cleared and planted, making the total area under cultivation in the District 5,700 acres. The output of manufactured Tea is returned as 1,61,226 lbs. or 8,226 lbs. less than that of the previous year.

14. Applications for waste lands for Tea planting were not numerous during the year; the Deputy Commissioner, Mr. Taban, accounts for this in the following able remarks on the

open in his District of the new Rules for the sale of waste land.

"The applications for land have not been as numerous as might have been expected, and many of the Planters tell me that they have been deterred from applying, not so much by the fear of competition at the sales as by the delay and difficulties previous to advertisement. This is due partly to want of care in making Sketch Maps and in fixing boundaries which exclude the land belonging to others, partly to the want of good surveys and draughtsmen, partly to the severe pressure on the officials of the current work in other Departments, which has precluded the speedy inspection of lots as to their boundaries, and thus thrown the examination of these lots on the Mouzadars, a class deficient in this District in the intelligence and zeal which should lead them to assist applicants by pointing out clearly what should be mentioned in their applications, and partly to most of the Planters having now acquired as much land as they can manage and being now engaged in improving what they have and organizing Companies to work it.

"From what I hear from Native purchasers, themselves few in this District have any idea of cultivating Tea for themselves, but buy well-situated land at the present low rates to re-sell at a profit.

"The object of the Natives who apply for land under the new Rules for the growth of the staple crops of the country is virtually the redemption of the Land Revenue on terms very advantageous to themselves. Though their desire to invest their savings in land affords a very pleasing proof of their confidence in our Rule, and of the accumulation of property and growth of intelligence in the District, the sale at Rupees 2-8 per acre of land, now waste but capable of easy culture in the simple would be very disadvantageous to the Revenue. I will therefore carefully watch these applications and will inform you of their progress; but up to the present time the applications have been for land the clearance of which is so desirable that I have not thought fit to raise the upset price, as an example I may mention that an application has been made for 500 acres of the Lowkhoo Jungle, land very fertile if tilled, but which interposes between the Station and the Berhampooter a broad belt of malarious jungle, haunted by wild beasts.

"The Planters generally seem very much dissatisfied with the new Rules and the machinery for working them available in this District. They do not wish sales suspended until survey is completed. They prefer to obtain possession of a moderate amount of land for immediate clearing and planting and to have a vague claim on the surrounding tract sufficient to prevent others settling so near them than to settle at once their exact boundaries. They, therefore, are in no hurry to demarcate, and therefore boundary disputes have hardly yet begun. But during the present year some concerns have been mortgaged to influential Europeans, and others are in the market, some in the London market, and mortgagers and purchasers will soon be desirous to know the exact tract over which they have acquired rights, so that there will soon be much litigation. Unfortunately I do not see at present what

materials there will be for the satisfactory decision of these disputes. Owing to the pressure of Office work the Sketch Maps have not been identified on the ground by Deputy Collectors, and I think from all I see and hear it will be very difficult to identify them hereafter. The Sketch Maps do not show the interior of the grant, and I am afraid the names given to many of the streams and swamps are purely arbitrary, and that there will be great doubts about their identification presently.

"The desire to obtain immediate possession and to prevent subsequent augmentation of the auction price in consequence of improvements effected by the applicants has led to the system of cultivation leases being in great favor. During the year seven of these leases were granted for 270 acres of land and seventeen applications were made. These leases are in favor with the more wealthy Natives, and I think the system deserves every encouragement as it encourages improvement without any immediate sacrifice of Revenue, and is preparing the way for a settlement more satisfactory than the present."

15. Mr. Raban notices the demand for labour in the District as follows:—

"The demand for labour is beginning to exceed the supply, and though this District, with a little assistance from Durrang, has hitherto met its requirements, Planters are now beginning to have recourse to importations from Bengal and Hindustan. The growing trade of the District is fast finding occupation and maintenance for those who worked for the Planters, and it is more profitable, as well as more pleasant for the Ryot, to grow and sell mustard, rice, and cotton than to work in a Tea garden. The Ryot is beginning to clear himself from the indebtedness in which he was sunk by the famine of 1857 and an advance loses much of its attractions: very few coolies have hitherto been imported from Bengal."

16. Durrang.—Next to Luckimpore the largest clearances made during the year appear to have been in Durrang. The area now under Tea cultivation in this District is 4,734 acres, or considerably more than double what it was last year. The outturn of manufactured Tea was 54,800 lbs., or nearly three times the outturn of the preceding season. Captain Lamb, the Deputy Commissioner, says that there is an abundance of local labour available in the District, provided the plantations are well situated in the vicinity of the large villages which can be drawn on for labour. Captain Lamb adds that the Ryots are beginning to look on service in Tea factories as more profitable than attending to their crops. It will be remembered that in the Nowgong District Mr. Raban reports quite differently as regard the Ryots of his District, which is separated from Durrang only by the River Berhampooter; the cause of this difference of feeling may be ascribed to the Durrang District being inhabited by Cacharics, a hardworking industrious people, from whom, before the growth of Tea planting in the District itself, labourers for the part of Assam were obtained; the population of Nowgong on the other hand is thoroughly惰惰.

17. So anxious are Planters in Durrang to exclude others from settling near them that many have purchased large tracts of waste land



in the vicinity of their present plantations, and as all these lots have been sold without survey, and their boundaries are unknown, it is impossible, in most instances, for new settlers to acquire land in the neighbourhood of old plantations, which of course are near the most eligible sites as regards labour. The Planters in Durrung have also succeeded in effecting a combination among themselves to prevent any competition at the land sales, and the land in Durrung has consequently been almost all of it sold at, or very little above, the upset price.

18. **KAMROOP.**—The Kamroop District was, I believe, the last of all the Districts of Assam (with the exception of Gawalparah) into which Tea planting was introduced. One thousand one hundred and fifty acres were brought under cultivation during the year of review, making a total area of 2,703 acres now cultivated with Tea in this District. The Deputy Commissioner seems to think that the operation of the Sale Rules has tended to discourage settlers, as he says that they consider it a great hardship and injustice that lands prospected and selected by them at considerable trouble and expense should be put up to public sale at which they may be outbid by people, who thus reap the fruits of their labour and experience.

19. The Deputy Commissioner thinks that Planters in his District will soon have to rely entirely on imported coolies to work their gardens, as local labour is becoming exhausted, wages having risen so very high that a cooly after a short period of service realizes sufficient to become independent and turn cultivator, when he makes more by the sale of his produce than he would by remaining in service.

20. **GOWALPARAH.**—Gawalparah is a permanently-settled District, and, with one exception, the twenty-two Tea gardens in it are all owned by Natives, who lease their land from the Zemindars rent-free for the first two or three years, from which would appear that Zemindars are beginning to encourage Tea planting. Captain Morton reports thus of the local labour by which these Tea estates are worked:—

"The coolies on the estates are for the most part paid in kind. They receive an advance of, say, Rupees 80, and enter into agreement to serve so many years. Whilst in service they receive a seer of rice besides a little oil and salt per diem, and a *Burkapur* (so ton covering) and *Gamcha* (cloth to tie round the head) annually. A small amount in the way of cash payment is deducted annually from the original advance.

"There certainly are to be found men who will accept service on such terms in preference to the free and highly paid service of Government, but it is not to be wondered at that the gardens dependent on their labour are very backward."

21. The following extract from Captain Morton's Report will explain why European Planters have not settled in Gawalparah:—

"There is no good soil for Tea in this District. The land near the Garrow Hills is perhaps second to none in Assam, but the permanent settlement of Gawalparah will, so long

as any land in Assam is to be brought under cultivation from Government, debar Europeans from entering the District."

22. **GENERAL REMARKS.**—At the close of the year of report there were 366 Proprietors of Tea plantations in Assam, of these nineteen were

1. Assam Tea Company.	ditto.
2. Upper Assam	ditto.
3. Debrooghar	ditto.
4. British India	ditto.
5. Luckimpore	ditto.
6. Mutlack	ditto.
7. Jorhaut	ditto.
8. Golaghat	ditto.
9. Sochsagar	ditto.
10. East India	ditto.
11. Bishnath	ditto.
12. Durrung	ditto.
13. Tezpora	ditto.
14. Colonial	ditto.
15. Imperial	ditto.
16. Amiable	ditto.
17. Cachar and Assam	ditto.
18. Central Assam	ditto.
19. Lower Assam	ditto.

exhibited in the District Returns. As Limited Liability Companies, the names of which are given in the margin, 138 are individual European Planters or European Firms, comprising two or more persons in partnership, and 149 are Natives.

23. The greater portion of the Native Proprietors are in the Sochsagar District, and the extent of their operations, with few exceptions, are not exhibited in the Return received from that District. I believe that several of these Native Proprietors are merely owners of grants with nominal shares on them.

24. The total area of waste land taken up for Tea planting in Assam is 5,104.75 acres, of this about a twelfth portion only, or 425.4 acres, has been brought under cultivation, including 12,838 acres cleared and planted in the year of report.

25. The outturn of last year was 25,05,664 lbs. of manufactured Tea, being over 3,00,000 lbs. less than what it was estimated to be last year. In two Districts, *viz.* Luckimpore and Nowgong, there is a decrease shown in the outturn as compared with last year; in the other four Districts the crop appears to have been more abundant, and an increase—although not a very large one—is shewn over the yield of 1863.

26. The estimated outturn for the present year, *i. e.*, 1865, is 32,26,765 lbs., which if obtained would give the value as realized in England of the Tea trade of Assam at about 3,00,000 lbs.

27. There are 36,258 labourers (including women and children) employed in the Tea gardens in Assam. Of this number 11,917 are imported and 24,341 are local. Viewing the extent of land under cultivation, there seems grounds for apprehension that some of the lands already cleared must be allowed to lie fallow in the jungles during the ensuing year since the number of labourers available does not give even one man for each acre under cultivation. We know from the concurrent testimony of the best and most experienced Planters that no factory can be efficiently worked with a less proportion of labour.

28. No Returns have been sent of the number of deaths and desertions amongst imported labourers, but under the operation of the Act recently passed for regulating Cooly Contracts information on these important heads will not be wanting in future.

There are no other points of interest to notice with reference to the present aspect of the Tea planting in Assam. It appears to be now well established in its advantages generally known and at Calcutta, and though the cultivation are not so great as they were, they still, and for a long time to come, continue to assure to the cultivators a handsome return on their investment. I cannot, however, conceal my fear that there may be disappointment in store in many cases for Shareholders in Associations which have purchased Tea estates at incredible ordinances on the cost of their formation, but if losses occur under these circumstances it will not be the fault of the Tea, but of unsound speculations which the most extravagant profits would not have realized. The only real drawbacks I know of to the utmost extension of the cultivation are the want of labour and the absence of a proper survey. Both these obstacles I am apprehensive, may continue to retard progress for some time to come, and their removal is a matter of solicitude as much of the Government and the Local Authorities as it is of those engaged in Tea planting.

30. There are so many persons now both in India and Europe who have an interest in the Tea plantation of Assam, that, who, yet, if they are vaguely acquainted with the geographical position of the Province, are hardly likely to have had an opportunity of informing themselves of its principal features, the lines and boundaries of the different Districts, and the situation of the Tea gardens in them. I have thought it might be useful to append to this Report a Map giving all this information. It has no pretension to rigid accuracy which I could not command, for even during its compilation several plantations changed hands and new ones were formed; but most persons, I think, will find their properties registered in it, and it will serve, I hope, to give the public a tolerably accurate notion of the general distribution of Tea cultivation in Assam.

\* NOTE.—Of the 402 Tea gardens now in Assam, the positions of 381 are shown with approximate correctness in the Map. Of the remaining 21 estates, twenty-two are in the Goalparah District, and the rest are either newly taken-up grants, the positions of which could not be ascertained, or small gardens close to and attached to other gardens entered in the Map, so that it was unnecessary, and at the same time not easy, to show them as distinct gardens.